

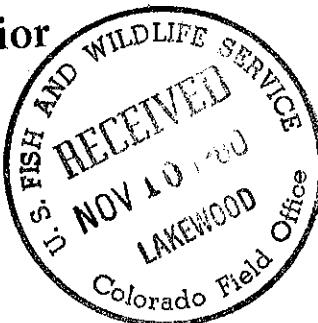


United States Department of the Interior

WATER AND POWER RESOURCES SERVICE

SOUTHWEST REGION

COMMERCE BUILDING, 714 S. TYLER, SUITE 201
AMARILLO, TEXAS 79101



IN REPLY
REFER TO: 720

NOV 06 1980

Memorandum

To: Project Leader, Ecological Services, Colorado Field Office,
U.S. Fish and Wildlife Service, Lakewood, CO

From: Regional Planning Officer

Subject: Transmittal of Field Data Regarding Wetlands--Closed Basin Division,
San Luis Valley Project, Colorado

Enclosed are copies of 1980 field information involving auger hole surveys, soil sample moisture analyses, infiltration tests, and evaporation pan readings as provided by our staff in Alamosa, Colorado. We have reduced some of the data from holes augered in wetland depressions to graphic profiles and have made a brief evaluation of the enclosed information. Results are separated into data categories and are also enclosed.

Our findings show that evaporation exceeds seepage for 11 wetland depressions investigated in Stage 4, and that soil types have a greater influence on the moisture content of strata between the ground surface and the water table than the depth to the water table. At the 12 wetland depressions investigated in Stage 4, subsurface conditions between the ground surface and the water table are not the same. We consider that while a seasonally high water table can contribute to the duration of ponded water and moist soils in some wetland depressions, an assumption of water table contribution should not be applied to all wetland depressions throughout the project division.

We will continue to perform analyses of these and some additional 1980 data from monitoring artesian-fed ponds in Stage 1-2 and from the discharge pond created by pumping from Test Well TW3-1 (Stage 3). In late November, we should also have the results of vegetation monitoring across a full growing season in the TW3-1 drawdown area.

We concur with the Fish and Wildlife Service (FWS) Area Manager's suggestion in his memorandum of October 24, that an impacts and mitigation meeting be held. A small, technically-oriented meeting is proposed in November-December to compare analyses of the project division impacts on wildlife and to proceed with revising the mitigation plan. This meeting would be arranged after the FWS has had the opportunity to review the enclosed materials and those previously transmitted, including: (1) data package from 1979 field work (sent March 14); (2) revised maps of 1978-1979 water table elevations and depths (sent October 8); (3) Colorado State Engineer's response on mitigation alternatives (informally sent October 14); and (4) U.S. Geological Survey's predictive drawdown maps (sent October 20).

We believe that with the mass of data and analyses now in hand, a logical prediction can be made of the project division effects and that plans for mitigation measures can be revised. We look forward to working with the involved agencies so as to provide appropriate mitigation during staged construction.

Construction in Stage 1-2 is scheduled to start in April 1981, and in June 1982 for Stage 3. This schedule calls for mitigation revisions to be resolved by February 1, 1981, and the draft supplementary environmental statement to be filed by June 1982. Please contact this office to arrange a date for our next mitigation meeting, which we suggest be held in Denver, Colorado.

William A. Seth

Enclosures

cc: Area Manager
U.S. Fish and Wildlife Service
1311 Federal Building
126 South State Street
Salt Lake City, UT 84130
(w/o enclosures)

Area Resource Manager
Bureau of Land Management
1921 State Street
Alamosa, CO 81101
(w/c enclosures)

Results of Listed Field Data Collected in 1980
Closed Basin Division, San Luis Valley Division Project, Colorado
October 1980

1. Infiltration Tests in Stage 4 Depressions

Eleven infiltration tests of several hours each were performed at sites AW-1 through AW-10, and at AW-12. These locations were adjacent to auger hole surveys near the lowest point of the wetland depressions as shown on the enclosed maps. The average infiltration for these depressions is 0.0007 inches per hour (in/h), indicating the tightness of the clayey soils mantling the depression bottoms.

2. Evaporation Pan Tests

Records are presented for four evaporation pans operated across the project division in the summer of 1980. These data are an extension of those collected at the same locations in the summer of 1979. Evaporation Site No. 1 (SE1/4 sec. 22, T. 42 N., R. 10 E.) is near the "AW" wetland depression sites in Stage 4. The average of six evaporation rates during the September 5 through October 9, 1980, period for Evaporation Site No. 1 is 0.0107 in/h. Comparison of the average infiltration rate for this period at nearby "AW" wetland depression sites (0.0007 in/h) indicates that evaporation would have a much greater influence than seepage on the loss incurred by surface water runoff ponded in these depressions. While average rates are identified here, comparison of individual rates also shows the same trend.

3. Infiltration Tests at Long Term Pump Test Site TW3-1

These are tests in Stage 3 where continuous test pumping started April 15, 1980. The enclosed data are an extension of earlier infiltration tests at this site to determine if drawing down the water table causes an increase of infiltration rates at the ground surface. No direct relation is shown for increasing surface infiltration with increasing depths to the water table. The four infiltration tests presented of 0.0005, 0.0014, 0.0018, and 0.0003 in/h are not of sufficient difference to indicate a marked trend for comparison with the water table drawdown.

4. Auger Hole Tests in Stage 4 Depressions

As shown on the enclosed maps, the 12 wetland depressions are located in an area that commonly receives seasonal surface water runoff. Unfortunately, when these tests were performed in the late summer of 1980, no water remained ponded in the depressions. Soil samples were collected and described from holes hand-augered near the lowest point of the clay-bottomed depressions. The holes were augered down to the water table at 4 to 8 feet in depth, and water rose in each hole after augering was completed. The depth to the water surface in each hole was recorded after 30 minutes duration. Tight clayey materials in the wetland depressions restrict seepage either downward from the ponded surface runoff water or upward from ground water under pressure. The field descriptions of the water content of the augered samples (dry to very wet) generally indicate increasing wetness with increasing depth for 10 of the holes. Profiles from

field descriptions at auger-hole sites AW-1 and AW-3 show reversals, i.e., relatively drier strata between upper and lower zones of the holes. Also, for six of the auger-hole sites, visually drier conditions were found for depths of 1 foot and greater below the ground surface.

5. Laboratory Tests of Auger Hole Samples from Stage 4 Depressions

Determinations of the percent of moisture by weight (not volume) were performed for most of the augered soil samples and are presented by tables and graphic profiles. These determinations are not continuous for the holes and must be viewed in relation to the soil type in considering the relative porosity and the degree of water saturation. With these qualifying factors in mind, laboratory determinations of the samples generally indicate increasing wetness with increasing depth for seven of the holes. Laboratory moisture profiles for auger holes at sites AW-1, AW-3, AW-5, AW-6, and AW-7 exhibit reversals, i.e., moisture in weight percent does not increase proportional to depth.

EVAPORATION AND RAINFALL RECORD

Section: No. 1 Between D.W. 4-2 & 4-5A, Twp. 42-N R. 10-E. See 22 sec.

Party: _____

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Therefore, 1-in fall in sea = 1809.6

EVAPORATION AND RAINFALL RECORD

Location:

W.L. Between P.M. & R.R. 4200 ft. Sec. 27 Sept. 27, 1960

Project: Chaco Basin

Party: Donald Shand

Supply tank reading
Previous Present Diff.
(in) (in) - (in)

Date	Time (hrs.)	Rainfall (in)	Time	Rainfall (in)	Computed evap (in/hr)	Pan reading Previous (in)	Pan reading Present (in)	Diff. R.F. (in)	Adjusted Evap (in/day)
			FILLED	TANK TO 0.0					
7/22/60	12:00	11.0	WORKED ON SHOT AND PAN.	7.68	0.014	7.02	7.02	0.0	0.2736
7/25/60	12:00	0.0	0.0	7.68		7.02	7.02	0.0	
7/29/60	11:00	0.0	TANK TO 0.0	8.0	0.0153	7.02	7.02	0.0	0.3683
7/29/60	11:00	0.0	FILLED	8.0		7.02	7.02	0.0	
8/1/60	12:30	0.0	0.0	8.0		7.02	7.02	0.0	
8/1/60	12:30	0.0	0.0	8.0		7.02	7.02	0.0	
8/1/60	11:00	0.0	0.0	8.0		7.02	7.02	0.0	
8/5/60	11:00	0.0	TANK TO 0.0	6.4	0.0124	7.02	7.02	0.0	0.2963
8/5/60	11:00	0.0	FILLED	6.4		7.02	7.02	0.0	
8/6/60	12:00	0.0	0.0	6.4		7.02	7.02	0.0	
8/6/60	12:00	0.0	TANK TO 0.0	6.4	0.0124	7.02	7.02	0.0	0.2963
8/13/60	11:30	0.0	0.0	7.2	0.0106	7.02	7.02	0.0	
8/12/60	11:30	0.0	FILLED TANK TO 0.0	6.4	0.0124	7.02	7.02	0.0	

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$ Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

$$\text{Area of pan} = 3.1416 \times 24^2 = 1809.6 \text{ in}^2$$

$$\text{Area of tank} = 3.1416 \times 9^2 = 254.5 \text{ in}^2$$

$$\text{Therefore, 1-in fall in tank} = \frac{254.5}{1809.6} = .141 \text{ in fall in pan}$$

$$\text{or, } \frac{\text{Tank Reading (in)}}{\text{Time in hours}} \times \frac{3}{.00055} = \text{Pan evap (in/hr)}$$

Tank reading (in) x .141time in hours

EVAPORATION AND RAINFALL RECORD

Location: W.L. BETTS, Box 4-2d Oneida Co., N.Y. SEC 22, SE 1/4

Project: Chaser Basin

Party: Clean Island

Date	Time (hrs)	Rainfall (in)	Supply tank reading Previous (in) (in ³)	Diff. Present (in) (in ³)	Computed evap (in/hr)	Pan reading Previous (in) (in)	Adjusted Evap (in/day)
					R.F.	R.F.	
7/17/80	3:00	FILLED TANK TO 0.0	0.0	0.0	0.0159	6.92	0.0157
7/18/80	10:30	0.05	0.0	0.0	0.0162	6.97	0.0155
7/19/80	16:30	0.0	0.0	0.0	0.0162	6.97	0.0155
7/20/80	2:30	-0.0	0.0	0.0	0.0162	6.97	0.0155
7/21/80	8:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/22/80	1:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/23/80	11:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/24/80	1:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/25/80	11:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/26/80	1:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/27/80	1:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/28/80	1:00	0.0	0.0	0.0	0.0162	6.97	0.0155
7/29/80	12:30	0.0	0.0	0.0	0.0162	6.97	0.0155

Volume of pan per inch = $1809.6 \times 1 = 1809.6$ in³
 Area of pan = $3.1416 \times 2^2 = 1809.6$ in²
 Volume of tank per inch = $254.5 \times 1 = 254.5$ in³
 Area of tank = $3.1416 \times 9^2 = 254.5$ in²

Therefore, 1-inch fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan
 or, Tank Reading (in³) $\times \frac{.141}{Time \text{ in hours}}$ = Pan evap (in/hr)

EVAPORATION AND RAINFALL RECORD

Location: W.L. Betzen Ave 4-16 Ave 4-59 Two 42nd St & 37th St

Project: Close Basin

Party: Demand P. Land

Date	Time (hrs)	Supply tank reading			Computed		Pan reading			Adjusted	
		Previous (in)	Present (in)	Diff. (in)	evap (in/hr)		Present (in)	Diff. (in)	E.P.-R.F. in/hr	Evap (in)	Evap-R.F. in/hr
6/10/80	1:30	6.82	7.00	.18	0.0128		6.92	.076	—	0.3081	
6/13/80	2:00	6.82	6.6	-.22			6.92	.076	—	0.3081	
6/13/80	2:00	FILLED TANK TO	0.0				6.92	.076	—	0.3081	
6/17/80	1:30	6.82	7.26	.46	0.0166		6.92	.076	—	0.4965	
6/17/80	1:30	FILLED TANK TO	0.0				6.92	.076	—	0.4965	
6/20/80	1:30	6.82	10.04	3.22	0.0197		6.92	.076	—	0.4719	
6/20/80	1:30	FILLED TANK TO	0.0				6.92	.076	—	0.4719	
6/23/80	2:30	6.82	6.07	-.75	0.0132		6.92	.076	—	0.3171	
6/23/80	2:30	FILLED TANK TO	0.0				6.92	.076	—	0.3171	
6/26/80	2:00	6.82	0.0	6.82	0.0199		6.92	.076	—	0.4771	
6/26/80	2:00	FILLED TANK TO	0.0				6.92	.076	—	0.4771	
6/27/80	3:00	6.82	0.0	6.82	0.0163		6.92	.076	—	0.3976	

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$

Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$

For, Tank Reading (in) $\times \frac{0.0055}{\text{Time in hours}}$ = Pan evap (in/hr)

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$

Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Tank reading (in) $\times \frac{141}{\text{Time in hours}}$ = Pan evap (in/hr)

EVAPORATION AND RAINFALL RECORD

Location: NO 1 BETWEEN DULY & HOW 450, TOW-42000-10-E SEC 22 SEC 3

Project: Chaco Basin

Party: Team 2

Date	Time (hrs)	Rainfall (in ³)	Supply tank reading			Computed evap. (in/hr)	Pan reading	Adjusted Evap. (in/day)
			Previous (in)	Present (in)	Diff. (in)			
5/18/80	3:00	0.0	7.92	7.92	0.0	0.0055	6.92	0.10
5/23/80	7:30	0.0	0.0	1.8	1.8	0.0055	6.92	0.10
5/23/80	13:00	FILLED TANK	7.92	7.92	0.0	-	-	0.1310
5/23/80	15:40	0.0	0.0	1.2	1.2	0.0181	6.92	0.10
5/26/80	3:30	0.0	7.92	7.92	0.0	-	-	0.1351
5/30/80	3:30	0.0	8.9	8.9	0.0	0.6165	6.92	0.0
5/30/80	3:30	0.0	8.9	8.9	0.0	-	-	0.3948
6/3/80	9:30	0.0	0.0	1.2	1.2	0.0174	6.92	0.0
6/3/80	21:30	-	7.92	7.92	0.0	-	-	0.3969
6/6/80	2:30	0.0	7.92	7.92	0.0	-	-	-
6/6/80	2:30	0.0	7.92	7.92	0.0	-	-	-
6/6/80	2:30	0.0	7.92	7.92	0.0	-	-	-
6/10/80	1:30	0.0	7.92	7.92	0.0	-	-	-
			Reading	Tank	Stuck	7.68		

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
 Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan

.02, Tank Reading (in³) x .00055 = Pan evap (in/hr)
 Time in hours

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Tank reading (in) x .141 = Pan evap (in/hr)
 Time in hours

EVAPORATION AND RAINFALL RECORD

Location: Abd. Hill of SW 1/4 Tw-400R-1E Sec 17 Hwy 52 & Ne 1/4

Project: Chesed Basin

Party: Desire D. Smith

Date	Time (hrs)	Supply tank reading		Computed evap (in/hr)	Pan reading		Adjusted Evap (in/hr)
		Rainfall Present (in)	Previous (in)		Present (in)	Diff R.F. (in)	
11/26/80	3:30	replaced float on	Supply tank to	3.5			
10/31/80	7:00	0.0	19.4	0.0166	6.72	6.72	0.0
10/31/80	12:00	0.0	19.4	0.0166	6.72	6.72	0.0
11/01/80	0:00	0.0	19.4	0.0166	6.72	6.72	0.0
11/01/80	10:30	0.8	20.2	0.0124	6.72	6.72	0.0
			STO2	TESTING	05 of 10-9-80		

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$

Or, Tank Reading (in)³ $\times .00055 = \text{Pan evap (in/hr)}$

Time in hours

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Tank reading (in) $\times .141 = \text{Pan evap (in/hr)}$

Time in hours

EVAPORATION AND RAINFALL RECORD

Location: No. 2 Building on 3rd fl., Tel-Horizon Site 10 Start of DEP
 Project: Chico Basin

Date: 9/15/80
 Party: Dennis Shihard

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)			Pan reading			Adjusted Evap (in/day)
		Rainfall (in)	Previous (in)	Present (in)	Diff (in)	R.P. (in)	Present (in)	Diff (in)	Evap-R.E. in/in		
9/15/80	9:30	0.0	0.0	6.2	0.2	0.0/23	6.72	6.72	0.0	0.2935	
9/15/80	9:30	0.0	0.0	6.2	0.2	0.0/23	6.72	6.72	0.0	0.2935	
9/19/80	11:00	0.0	0.0	11.2	1.2	0.0/69	6.72	6.72	0.0	0.4061	
9/19/80	11:00	0.0	0.0	11.2	1.2	0.0/69	6.72	6.72	0.0	0.4061	
9/21/80	11:30	0.0	0.0	9.0	0.0	0.0/76	6.72	6.72	0.0	0.9201	
9/21/80	11:30	0.0	0.0	9.0	0.0	0.0/76	6.72	6.72	0.0	0.9201	
9/20-80	12:00	0.0	0.0	13.2	0.0	0.0/44	6.72	6.72	0.0	0.2639	
9/23/80	12:00	0.0	0.0	13.2	0.0	0.0/44	6.72	6.72	0.0	0.2639	
9/27/80	12:00	0.0	0.0	13.2	0.0	0.0/44	6.72	6.72	0.0	0.2639	
9/15/80	12:00	0.0	0.0	13.2	0.0	0.0/44	6.72	6.72	0.0	0.2639	
9/16/80	12:30	0.0	0.0	13.2	0.0	0.0/44	6.72	6.72	0.0	0.2639	
9/17/80	12:00	0.0	0.0	13.2	0.0	0.0/44	6.72	6.72	0.0	0.2639	

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
 Area of tank = $3.1416 \times 9^2 = 254.3 \text{ in}^2$
 Therefore, 1-in fall in tank = $\frac{254.3}{1809.6} = .141 \text{ in fall in pan}$

OK, Tank Reading (in) $\times \frac{141}{1809.6} = \text{Pan evap (in/hr)}$
 Time in hours $\times \frac{141}{1809.6} = \text{Pan evap (in/hr)}$

Tank reading (in) $\times \frac{141}{1809.6} = \text{Pan evap (in/hr)}$
 Time in hours $\times \frac{141}{1809.6} = \text{Pan evap (in/hr)}$

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

EVAPORATION AND RAINFALL RECORD

Location: Old & new oil well tank - 100 ft. N.E. of Hwy 4

Project: Chaco Basin

Party: Desert Ranch

Date	Time (hrs)	Rainfall (in)	Previous tank reading (in)	Sunpy tank reading (in)	Computed evap (in/hr)	Pan reading Previous (in)	Pan reading Present (in)	Adjusted Evap (in/day)
7/25/80	11:30	0.04	0.0	4.8	0.0093	6.72	6.72	0.0093
7/26/80	11:30	Filled	Tank to	-0.0	checked pan reading for	6.72	-	-
7/29/80	10:00	0.0	0.0	11.9	0.0172	6.72	6.72	0.0172
7/29/80	11:30	Filled	Tank to	-0.0	-	-	6.72	-
8/1/80	11:30	0.0	0.0	11.0	0.0211	6.72	6.72	0.0211
8/1/80	10:00	0.1	0.0	14.7	0.0219	6.72	6.72	0.0219
8/1/80	11:00	Filled	Tank to	0.0	-	-	6.72	-
8/6/80	11:20	0.0	0.0	4.8	0.0093	6.72	6.72	0.0093
8/6/80	11:30	Filled	Tank to	0.0	-	6.72	-	-
8/13/80	00:30	100	float open	-	-	-	-	-
8/12/80	11:30	Filled	tank to	0.0	reset pan to	6.72	-	-

Area of pan = $3.1416 \times 9^2 = 1809.6 \text{ in}^2$
 Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$

Or, Tank Reading (in³) $\times \frac{.00055}{\text{Time in hours}}$ = Pan evap (in/hr)

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Tank reading (in) $\times \frac{.141}{\text{Time in hours}}$ = Pan evap (in/hr)

EVAPORATION AND RAINFALL RECORD

Location: 11/2-1st. Map on 3-4th scale - see 17 min to 16 hr

Project: Chaco Basin

Party: Sand Pond

Date	Time (hrs)	Rainfall (in)	Supply tank reading Previous (in ³)	Present (in)	Diff (in ³)	Computed evap (in/hr)	Pan reading Previous (in)	Pan reading Present (in)	Adjusted Evap in/day
7/3/80	11:30	0.06	0.0	5.0	5.0	0.0155	6.72	6.72	0.06
7/3/80	12:30	Filled	Tank To	0.0			6.72	6.72	0.053
7/21/80	2:30	0.0	0.0	12.5	12.5	0.0178	6.72	6.72	0.9273
7/21/80	2:30	Filled	Tank To	0.0			6.72	6.72	
7/21/80	10:00	0.0	0.0	13.5	13.5	0.0204	6.72	6.72	0.4886
7/21/80	12:00	0.15	0.15	13.0	13.0	0.0141	6.72	6.72	
7/16/80	11:00	0.15	0.0	9.5	9.5	0.015	6.72	6.72	0.0139
7/16/80	11:00	Filled	Tank To	0.0			6.72	6.72	0.3331
7/18/80	13:00	0.0	0.0	8.5	8.5	0.0164	6.72	6.72	0.15
7/18/80	13:00	Filled	Tank To	0.0			6.72	6.72	
7/21/80	10:30	0.0	0.0	14.6	14.6	0.0218	6.72	6.72	0.5228
7/21/80	10:30	Filled	Tank To	0.0			6.72	6.72	

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$ Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$ Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in panOr, Tank Reading (in³) $\times \frac{.141}{.00055} = \text{Pan evap (in/hr)}$ Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$ Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$ Pan reading (in) $\times \frac{.141}{\text{Time in hours}} = \text{Pan evap (in/hr)}$

EVAPORATION AND RAINFALL RECORD

Location: No. 2 Hill No. 3-40 Two-Gear-R-11-E Sec 17 Hwy 66 N.E.

Project: Chaco Basin

Party: Donahue

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted Evap in/day
		Rainfall (in)	Previous (in ³)	Present (in ³)		Diff (in ³)	Present (in)	Diff R.F. (in)	
6/13/80	163000	0.0	0.0	8.7	8.7	0.673	6.73	0.0	—
6/13/80	2130AM				FILLED TANK TO 0.0				0.4197
6/17/80	1230PM	0.0	0.0	13.6	13.6	0.0198	6.72	6.72	—
6/17/80	1230PM				FILLED TANK TO 0.0				0.9745
6/20/80	1230PM	0.0	0.0	16.0	16.0	0.0313	6.72	6.72	—
6/20/80	1230PM				FILLED TANK TO 0.0				0.7520
6/23/80	3:30PM	0.0	0.0	END STOCK OPEN	END	6.72	6.72	2.28	—
6/23/80	3:30PM				FILLED TANK TO 0.0				—
6/26/80	4:00AM	0.0	0.0	11.0	11.0	0.0223	6.72	6.72	—
6/26/80	11AM				FILLED TANK TO 0.0				0.5356
7/1/80	2:00PM	0.0	0.0	11.5	11.5	0.0132	6.72	6.72	—
7/1/80	2:00PM				FILLED TANK TO 0.0				0.3164

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
 Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$
 Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$

or, $\frac{\text{Tank Reading (in}^3\text{)}}{\text{Time in hours}} \times \frac{0.0055}{\text{Pan evap (in/hr)}}$ = Pan evap (in/hr)

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Tank reading (in) $\times \frac{141}{\text{Time in hours}}$ = Pan evap (in/hr)

EVAPORATION AND RAINFALL RECORD

Location: No. 2. 1/mi. N of Hwy 2-10 Two-Mile-Sec/7 mi S of Mex 40

Project: Chaco Basin

Party: Dennis Johnson

Date	Time (hrs)	Rainfall (in)	Supply tank reading Previous (in) Present (in)	Computed evap (in/hr)	Pan reading Previous (in)	Pan reading Present (in)	Adjusted Evap (in/day)
	TEST		Diff (in ³)		R.F. (in)	R.F. (in)	Evap-R.F. in/hr
5/23/80	12:30pm STARTED	0.0	FILLED TANK TO 0.0		0.0	6.72	
5/27/80	2:30pm	0.0	0.0	14.5	0.0209 in/hr.	6.72	0.0
5/31/80	2:30pm	0.0	FILLED TANK TO 0.0		6.72	6.72	0.0
6/3/80	10:30am	0.0	0.0	7.6	0.0153	6.72	0.0
6/13/80	1:30pm	0.0	0.0	17.5	0.0252	6.72	0.0
6/13/80	6:30pm	0.0	FILLED TANK TO 0.0		6.72	6.72	0.0
6/16/80	4:30pm	0.0	0.0	16.0	0.0215	6.72	0.0
6/18/80	4:30pm	0.0	FILLED TANK TO 0.0		6.72	6.72	0.0
6/19/80	12:30pm	0.0	0.0	14.3	0.0212	6.72	0.0
6/20/80	12:30pm	0.0	FILLED TANK TO 0.0		6.72	6.72	0.0

$$\text{Area of pan} = 3.1416 \times 24^2 = 1809.6 \text{ in}^2$$

$$\text{Area of tank} = 3.1416 \times 9^2 = 254.5 \text{ in}^2$$

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$

Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan

$$\text{or, Tank Reading (in}^3\text{)} \times .00055 = \text{Pan evap (in/hr)}$$

$$\text{Time in hours} \times .141 = \text{Pan evap (in/hr)}$$

$$\frac{\text{Tank reading (in)}}{\text{Time in hours}} \times .141 = \text{Pan evap (in/hr)}$$

EVAPORATION AND RAINFALL RECORD

Location: Max 3 ft. S. of Hwy 29 Two-39 NRP-11-E Sec 13 N.E.²

Project: Closed Basin

Party: Dam of Ranch

Date	Time (hrs)	Rainfall (in)	Supply Previous (in)	Tank Present (in)	Diff (in)	Computed evap (in/hr)	Pan Previous (in)	Pan Present (in)	Diff (in)	Pan Reading R.F. (in)	Adjusted Evap in/hr	Evap R.F. (in/day)	
9/16/80	10:30	.1160	10.0	9.8	.2	0.0165	6.22	6.22	.0	—	—	—	
9/18/80	12:30	0.0	0.0	8.9	—	—	6.22	6.22	.0	—	0.3974	—	
9/19/80	2:30	.1160	—	9.0	—	—	6.22	6.22	.0	—	—	—	
9/26/80	12:00	0.0	0.0	13.9	13.9	0.0079	6.22	6.22	.0	—	0.1889	—	
10/13/80	1:00	0.0	0.0	10.8	10.8	0.0098	6.22	6.72	0.0	—	0.2163	—	
10/13/80	1:00	0.0	0.0	10.0	—	—	6.72	6.72	.0	—	0.2867	—	
10/29/80	1:20	0.0	0.0	12.2	12.2	0.0119	6.72	6.72	.0	—	—	—	
				STOP	TESTING	0.0	10-9-80						

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
 Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$
 Therefore, 1 in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

$$\frac{\text{Pan reading (in)} \times .141}{\text{Time in hours}} = \text{Pan evap (in/hr)}$$

EVAPORATION AND RAINFALL RECORD

Location: W.M. 3.3 miles SW of Durango NE - 1/16 sec 13 U.E.

Project: Chaco Basin

Party: Dennis & Bob

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted evap (in/hr)
		Rainfall (in)	Previous (in ³)	Present (in)		Previous (in)	P.R. (in)	Diff (in)	
8/1/80	1100	Tank 10	0.0						
8/15/80	1130	0.0	0.0	-8.6	0.0167	6.72	6.12	-0.60	-0.0167
8/15/80	1130	0.0	0.0	-8.6	0.0167	6.72	6.12	-0.60	-0.0167
8/21/80	2100	Tank 10	0.0						
8/21/80	2100	0.0	0.0	-10.6	0.0155	6.72	6.22	-0.50	-0.0155
8/21/80	2100	0.0	0.0	-10.6	0.0155	6.72	6.22	-0.50	-0.0155
8/22/80	200	0.0	0.0	-8.3	0.0163	6.72	6.22	-0.50	-0.0163
8/22/80	2100	Tank 10	0.0						
8/22/80	2100	0.0	0.0	-8.3	0.0163	6.72	6.22	-0.50	-0.0163
8/23/80	200	0.0	0.0	-8.2	0.0162	6.72	6.22	-0.50	-0.0162
8/23/80	2100	Tank 10	0.0						
8/23/80	2100	0.0	0.0	-8.2	0.0162	6.72	6.22	-0.50	-0.0162
8/24/80	200	Tank 10	0.0						
8/24/80	200	0.0	0.0	-7.7	0.0151	6.72	6.22	-0.50	-0.0151
8/25/80	2100	Tank 10	0.0						
8/25/80	2100	0.0	0.0	-7.7	0.0151	6.72	6.22	-0.50	-0.0151
8/26/80	1130	0.0	0.0	-13.5	0.0073	6.72	6.72	0.0	0.0073

Area of pan = 3.1416 x 24² = 1809.6 in²
 Area of tank = 3.1416 x 9² = 254.5 in²
 Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan

Or, Tank Reading (in³) x .00035 = Pan evap (in/hr)
 Time in hours

Tank reading (in) x .141 = Pan evap (in/hr)
 Time in hours

Volume of pan per inch = 1809.6 x 1 = 1809.6 in³
 Volume of tank per inch = 254.5 x 1 = 254.5 in³

EVAPORATION AND RAINFALL RECORD

Location: 103 Yards S of Hwy 2-2, Twp 39 RR - 11-6 Sec 13 H.E.

Project: Chassee Basin

Party: Dennis P. Johnson

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted Evap (in/day)
		Rainfall (in)	Previous (in)	Diff (in)		Present (in)	Diff (in)	R.F. (in)	
7/23/60	2:00	FULL	TANK TO	0.0					
7/26/60	7:00	0.80	0.0	1.20	0.0029	6.60	6.84	+0.84	0.0195
7/25/60	1:00	FULL	CANK TO	0.0					
7/29/60	2:20	-0.05	-0.05	-0.08	0.019	6.22	6.72	-0.50	0.3847
7/29/60	1:20	FULL	TANK TO	0.0					
8/1/60	1:30	0.0	0.0	0.1	0.0178	6.72	6.72	0.0	—
8/1/60	1:30	FULL	TANK TO	0.0					
8/5/60	12:00	0.0	0.0	0.0	0.0149	6.72	6.72	0.0	0.9222
8/5/60	1:20	FULL	TANK TO	0.0					
8/6/60	1:00	0.0	0.0	0.5	0.0126	6.72	6.72	0.0	0.3013
8/8/60	1:00	FULL	TANK TO	0.0					
8/12/60	1:00	-0.0	-0.0	0.5	0.0154	6.72	6.72	0.0	0.3701

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
 - Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan

$$\text{or, Tank Reading (in}^3\text{)} \times \frac{.00055}{\text{Time in hours}} = \text{Pan evap (in/hr)}$$

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

$$\frac{\text{Tank reading (in)}}{\text{Time in hours}} \times .141 = \text{Pan evap (in/hr)}$$

EVAPORATION AND RAINFALL RECORD

Location: Mo. 3. 2 miles S of Hwy 2-2, Texarkana, Tex. Sec 13 1/4 mi²

Project: Chassee Ranch

Party: Ranch hand

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)		Pan reading			Adjusted evap (in/day)	
		Rainfall (in)	Previous (in ³)	Diff. (in ³)	Present (in)	Previous (in)	Present (in)	Diff. (in)	R.F. (in)	Evap-R.F. in/hr	Evap (in/day)
7/31/80	11:00	FILLED	TANK TO	0.0	-5.4	5.4	0.0164	6.60	6.60	0.03	0.3912
7/31/80	9:30	FILLED	TANK TO	0.0	-	-	-	6.60	6.60	-	-
7/31/80	11:00	FILLED	TANK TO	0.0	14.7	14.7	0.0212	6.60	6.60	0.03	0.5
7/31/80	11:30	0.95	0.0	11.2	11.2	0.0164	6.60	6.72	6.72	0.012	0.3894
7/31/80	11:30	FILLED	TANK TO	0.0	-	-	-	6.72	6.72	-	-
7/31/80	12:30	8.13	6.0	13.0	13.0	0.0189	6.72	6.84	6.84	0.12	0.4968
7/31/80	12:30	FILLED	TANK TO	0.0	-	-	-	6.84	6.84	-	-
7/31/80	2:00	0.0	0.0	11.5	11.5	0.0221	6.84	6.65	6.65	-0.24	0.5295
7/31/80	2:00	0.0	0.0	10.6	10.6	0.0156	6.60	6.60	6.60	0.0	0.3732

Ares of pan = 3.1416 x 24.2 = 1809.6 in²
 Area of tank = 3.1416 x 9.2 = 254.5 in²

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan

$$\text{or, } \frac{\text{Tank Reading (in)} - \text{Pan evap (in/hr)}}{\text{Time in hours}} = \text{Pan evap (in/hr)}$$

Volume of pan per inch = 1809.6 x 1 = 1809.6 in³
 Volume of tank per inch = 254.5 x 1 = 254.5 in³

$$\text{Tank reading (in) } \times .141 = \text{Pan evap (in/hr)}$$

Time in hours

EVAPORATION AND RAINFALL RECORD

Location: No. 3. Main S of Hwy 22 Two-3 NW-NE SEC 13 NE 1/4

Project: Chosen Basin

Party: Don Redhead

Date	Time (hrs)	Rainfall (in)	Supply tank reading Previous (in) Present (in)	Computed evap (in/hr)	Pan reading		Adjusted Evap (in/day)
					Diff (in)	R.F. (in)	
6/11/80	10:00AM	0.0	FILLED TANK TO 0.0				
6/13/80	11:00AM	0.0	10.0	0.0196	6.60	6.60	0.9700
6/17/80	10:30AM	0.0	9.0	0.0210	6.60	6.60	0.5288
6/17/80	12:30PM	0.0	FILLED TANK TO 0.0				
6/20/80	11:30AM	0.0	9.0	0.0212	6.60	6.60	0.5099
6/20/80	11:30AM	0.0	FILLED TANK TO 0.0				
6/23/80	9:30AM	0.0	9.0	0.0212	6.60	6.60	0.5142
6/23/80	9:30AM	0.0	FILLED TANK TO 0.0				
6/26/80	12:30PM	0.0	12.3	0.0255	6.60	6.60	0.6121
6/26/80	12:30PM	0.0	FILLED TANK TO 0.0				
7/1/80	11:00AM	0.0	15.9	0.0187	6.60	6.60	0.4493

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$ Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$ Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in panor, $\frac{\text{Tank Reading (in}^3\text{)} \times .00055}{\text{Time in hours}} = \text{Pan evap (in/hr)}$ Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$ Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

$$\frac{\text{Tank reading (in) } \times .141}{\text{Time in hours}} = \text{Pan evap (in/hr)}$$

EVAPORATION AND RAINFALL RECORD

Location: U.S. Geod. Surv. - SEC 19 SUR 2

Project: Cleared Bank

Date: Sept 1-18, 1951

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted Evap (in/day)
		Rainfall (in)	Previous (in)	Present (in)		Present (in)	Diff (in)	E.V.A. (in/hr)	
7/16/51	9:30	0.00	10.00	8.0		7.02	-0.02	-0.0	-
7/17/51	7:00	0.0	0.0	8.4	0.0103	7.02	-0.02	-0.0	0.2459
7/19/51	11:30	0.0	0.0	0.0		7.02	-0.0	-	-
7/26/51	7:00	0.0	0.0	14.2	0.0083	7.02	-0.02	-0.0	0.2002
7/31/51	7:00	0.0	10.0	0.0		7.02	-0.02	-0.0	-
8/1/51	2:00	0.0	0.0	14.6	0.0120	7.02	-0.02	-0.0	0.2889
8/1/51	9:00	0.00	10.0	10.0		7.02	-0.02	-0.0	-
8/1/51	2:30	0.0	10.5	0.5	0.0102	7.02	-0.02	-0.0	0.2459

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
 Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Therefore, 1-in fall in tank = $\frac{1809.6}{254.5} = .141 \text{ in fall in pan}$

or, $\frac{\text{Tank reading (in)} - \text{Pan evap (in/hr)}}{\text{Time in hours}} = \text{Pan evap (in/hr)}$

Tank reading (in) x 141 = Pan evap (in/hr)

Time in hours

EVAPORATION AND RAINFALL RECORD

Location: No 4 Yer/Rdy, 1st-38 NR-11E SEC 19 SW 1/4

Project: Eckerd Biscayne
Party: Daniel Johnson

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted Evap (in/day)
		Previous (in)	Present (in)	Diff (in)		Present (in)	Diff (in)	R.F. (in) in/hr	
8/21/60	2:30	FILLED	7.00	0.0		7.02	-0.02	0.0	-0.3734
8/21/60	3:00	0.03	0.0	-0.03	0.0156	7.02	-0.02	0.0	
8/21/60	3:00	FILLED	TANK TO	0.0		7.02	-0.02	0.0	
8/21/60	3:00	0.0	0.0	0.0	0.0138	7.02	-0.02	0.0	-0.3314
8/22/60	3:00	FILLED	TANK TO	0.0		7.02	-0.02	0.0	
8/22/60	3:00	0.0	0.0	0.0	0.0202	7.02	-0.02	0.0	-0.4844
8/22/60	3:00	FILLED	TANK TO	0.0		7.02	-0.02	0.0	
8/22/60	3:00	0.0	0.0	0.0	0.0202	7.02	-0.02	0.0	
8/27/60	10:00	7.00	7.00	0.0		7.02	-0.02	0.0	
8/27/60	10:00	FILLED	TANK TO	0.0		7.02	-0.02	0.0	
8/27/60	10:00	0.0	0.0	0.0	0.0190	7.02	-0.02	0.0	-0.4324
8/31/60	10:00	0.0	0.0	0.0	0.0190	7.02	-0.02	0.0	
9/3/60	10:00	0.0	0.0	0.0	0.0190	7.02	-0.02	0.0	
9/7/60	9:30	0.39	0.0	-0.39	15.7	0.0089	7.02	7.02	0.0
									0.2020

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$
Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$
Therefore, 1-in fall in tank = $254.5 \times .141 = 36.5 \text{ in fall in pan}$

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$
Time in hours = $\frac{\text{Pan reading (in)}}{\text{Pan evap (in/hr)}}$
Time in hours = $\frac{\text{Pan reading (in)}}{\text{Pan evap (in/hr)}}$

EVAPORATION AND RAINFALL RECORD

Location: No. 4 Mill Rd, Two-Mile-Ridge, Sec. 19, Sw. 1/4

Project: Chestnut Basin

Party: Daniel J. St.

Date	Time (hrs)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted Evap (in/day)
		Rainfall (in)	Previous (in ³)	Diff (in ³)		Present (in)	Diff (in)	P.R. (in)	
7/23/60	3:00	FILLED	TANK TO 0.0	-4.7	0.0093	6.22	6.98	+0.12	0.0590
7/25/60	3:00	0.00	0.00	-4.7	changed from reading to 0.0	7.02	7.02	-0.00	0.2160
7/29/60	11:00	0.00	0.00	-13.2	0.0196	7.03	7.03	-0.00	0.9109
7/29/60	16:00	FILLED	TANK TO 0.0	-	-	-	-	-	-
8/1/60	3:30	0.0	0.0	7.5	0.0142	7.02	7.02	0.0	-0.3407
8/1/60	3:30	FILLED	TANK TO 0.0	-	-	7.02	7.02	-	-
8/3/60	2:30	0.00	0.00	-6.0	0.0149	7.08	7.02	+0.06	0.0139
8/3/60	2:30	FILLED	TANK TO 0.0	-	-	7.08	7.08	-	-
8/8/60	3:00	0.0	0.0	-5.0	0.0097	7.08	7.02	-0.06	-0.2334
8/12/60	3:00	0.00	180.6	180.6	-	-	-	-	-
8/12/60	2:30	0.0	0.0	8.5	0.0135	7.02	7.02	0.0	0.2295

Area of pan = $3.1416 \times 2^2 = 18.09.6 \text{ in}^2$
 Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$

Or, Tank Reading (in³) x .00055 = Pan evap (in/hr)
 Time in hours

Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$
 Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$

Tank reading (in) x .141 = Pan evap (in/hr)
 Time in hours

EVAPORATION AND RAINFALL RECORD

Location: Mo. & Grand River - 11-E Sec. 19 SW 1/4

Project: Cheesec Basin

Party: Deans School

Date	Time (hrs)	Supply tank reading			Computed			Pan reading			Adjusted			Evap (in/day)
		Rainfall (in)	Previous (in)	Present (in)	Diff (in)	evap (in/hr)	Diff (in)	R.F. (in)	Present (in)	Previous (in)	Diff (in)	R.F. (in)	Evap-R.F. in/hr	
7/31/80	8:30	FILLED	TANK 10	0.0	-1.2	0.0035	6.72	6.72	0.0	6.6028	0.0671			
7/31/80	8:30	0.84	0.0	0.0	-1.2	0.0035	6.72	6.72	0.0	6.6028	0.0671			
7/31/80	8:30	FILLED	TANK 10	0.0	-1.2	0.0035	6.72	6.72	0.0	6.6028	0.0671			
7/31/80	10:00	0.0	0.0	0.0	-1.0	0.0166	6.72	6.72	0.0	6.3984	0.3984			
7/31/80	10:00	FILLED	TANK 10	0.0	-1.0	0.0166	6.72	6.72	0.0	6.3984	0.3984			
7/31/80	9:30	0.06	0.0	0.0	-7.5	0.0111	6.72	6.72	0.12	6.0109	0.2616			
7/31/80	9:30	FILLED	TANK 10	0.0	-7.5	0.0111	6.72	6.72	0.12	6.0109	0.2616			
7/31/80	9:00	0.1	0.0	0.0	-11.5	0.0177	6.84	6.84	0.0	6.0175	0.4200			
7/31/80	9:00	FILLED	TANK 10	0.0	-11.5	0.0177	6.84	6.84	0.0	6.0175	0.4200			
7/31/80	9:00	0.0	0.0	0.0	-9.9	0.0182	6.84	6.84	0.0	6.0182	0.4357			
7/31/80	3:00	FILLED	TANK 10	0.0	-9.9	0.0182	6.84	6.84	0.0	6.0182	0.4357			
7/22/80	3:00	0.0	0.0	0.0	-12.6	0.0189	6.72	6.72	0.0	6.0189	0.4406			

Area of pan = 3.1416 x 24² = 1809.6 in²
 Area of tank = 3.1416 x 9² = 254.5 in²

Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in pan

or, Tank Reading (in³) x .00055 = Pan evap (in/hr)
 Time in hours

Volume of pan per inch = 1809.6 x 1 = 1809.6 in³
 Volume of tank per inch = 254.5 x 1 = 254.5 in³

Tank reading (in) x .141 = Pan evap (in/ar)
 Time in hours

EVAPORATION AND RAINFALL RECORD

Location: No. 9. Hwy. Rd. Two-38 NW-11-E. Sec. 19 SW 1/4

Project: CLOSED BASIN

Party: Dams & Sheds

Date	Time (hrs)	Rainfall (in)	Supply tank reading		Computed evap (in/hr)	Pan reading		Adjusted Evo in/hr	Evap (in/day)
			Previous (in)	Present (in)		Previous (in)	Present (in)		
6/11/80	10:00AM	0.0	0.0	9.5	2.5	0.0186	6.72	—	0.9965
6/13/80	10:00AM	0.0	0.0	FILLED TANK TO 0.0	0.0	—	—	—	—
6/13/80	meidan			FILLED TANK TO 0.0	0.0	—	—	—	—
6/17/80	9:30AM	0.0	0.0	13.8	13.8	0.0204	6.72	6.72	0.9890
6/17/80	9:30AM			FILLED TANK TO 0.0	0.0	—	—	—	—
6/20/80	10:30AM	0.0	0.0	12.2	12.2	0.0236	6.72	6.72	0.5655
6/21/80	10:30			FILLED TANK TO 0.0	0.0	—	—	—	—
6/23/80	5:30PM	0.0	0.0	12.7	12.7	0.0227	6.72	6.72	0.5840
6/28/80	5:30PM			FILLED TANK TO 0.0	0.0	—	—	—	—
6/26/80	2:00PM	0.0	0.0	14.0	14.0	0.0288	6.72	6.72	0.6916
6/26/80	2:00PM			FILLED TANK TO 0.0	0.0	—	—	—	—
7/1/80	5:30AM	0.0	0.0	13.2	13.2	0.01625	6.72	6.72	0.3901

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$ Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$ Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$ Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$ Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141$ in fall in panPan reading (in) $\times \frac{.141}{\text{Time in hours}}$ = Pan evap (in/hr)Pan reading (in) $\times .00055$ = Pan evap (in/hr)

EVAPORATION AND RAINFALL RECORD

Location: 103. $\frac{3}{4}$ mi. S of Hwy 2-2 Two-39er-r-r SEC 13 445 $\frac{1}{2}$

Project: Crossen Basin

Party: Donald L Schmitz

Date	Time (hrs)	Rainfall (in.)	Supply tank reading			Computed evap (in/hr)	Pan reading			Adjusted Evap (in/day)
			Previous (in)	Present (in)	Diff (in 3)		Present (in)	Diff (in)	R.F. in/hr	
5/21/80	11:00A	TEST	FILLED TANK TO 0.0				0.0	6.60		
5/23/80	2:30PM	0.13	0.0	6.0	6.0	0.0164 cu/hr.	6.60	6.22	+0.12	0.0161
5/23/80	2:30PM		FILLED TANK TO 0.0					6.72		0.3864
6/1/80	1:30AM	0.0	0.0	8.6	8.6	0.0128 cu/hr.	7.72	6.60	-0.12	0.0131
5/27/80	1:30AM		FILLED TANK TO 0.0					6.72		0.3864
5/30/80	11:30AM	0.0	0.0	9.4	9.4	0.0189	6.60	6.60	0.0	—
5/30/80	11:30AM		FILLED TANK TO 0.0					6.60		0.4544
6/1/80	11:30AM	0.0	0.0	14.0	14.0	0.206	6.60	6.60	0.0	—
6/1/80	11:30AM		FILLED TANK TO 0.0					6.60		0.4935
6/6/80	12:30PM	0.0	0.0	10.1	10.1	0.0199	6.60	6.60	0.0	—
6/6/80	12:30PM		FILLED TANK TO 0.0					6.60		0.4747
6/10/80	11:00AM	0.0	0.0	11.4	11.4	0.0170	6.60	6.60	0.0	—
										0.4082

Area of pan = $3.1416 \times 24^2 = 1809.6 \text{ in}^2$ Area of tank = $3.1416 \times 9^2 = 254.5 \text{ in}^2$ Therefore, 1-in fall in tank = $\frac{254.5}{1809.6} = .141 \text{ in fall in pan}$ or, $\frac{\text{Tank Reading (in)} \times .00055}{\text{Time in hours}} = \text{Pan evap (in/hr)}$ Volume of pan per inch = $1809.6 \times 1 = 1809.6 \text{ in}^3$ Volume of tank per inch = $254.5 \times 1 = 254.5 \text{ in}^3$ Therefore, $\frac{\text{Tank reading (in)} \times .141}{\text{Time in hours}} = \text{Pan evap (in/hr)}$

DATA SHEET FOR INFILTRATION TESTS

Location: Aw - 1
 Project: Closed Box

Part No.

Surface soil texture/underlying texture:

RUN NO.	DATE	TIME	Tank : Volume : Accum. : Time (hrs) : Infil- minutes:reading:into ring:vol. into: between :tration (cu. in.) : (in) : ring (in): readings : (in/hr)
10:00 0	1.3	0	0
10:05 5	1.8	0.5	0.083
10:10 10	1.6	0.0	0.083
10:15 15	1.3	0.2	0.083
10:20 20	1.4	0.2	0.053
10:25 25	1.2	0.0	0.083
10:30 30	1.4	0.0	0.083
10:40 40	1.3	0.0	0.167
10:45 50	1.8	0.0	0.162
11:00 60	1.4	0.0	0.167
11:15 75	1.6	0.0	0.250
11:30 90	1.7	0.0	0.250
11:45 105	1.5	0.0	0.250
12:00 120	1.3	0.0	0.500
12:15 150	1.6	0.0	0.500
12:30 180	1.8	0.0	0.500
12:45 210	1.2	0.0	0.500
1:00 240	1.6	0.0	0.500
1:15 270	1.5	0.0	0.500
1:30 300	1.2	0.0	0.500

Calculations:

$$\text{Volume into ring (in)} = \frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$$

$$\text{Infiltration in/hr} = \frac{\text{volume into ring}}{\text{time (hrs) between readings}}$$

Notes: For an 18" diam. ring
 Inf. in/hr = $\frac{\text{tank reading} \times 0.0393}{\text{time in hrs.}}$

$$\text{Inf} = 0 \text{ in/hr}$$

Soil Moisture

Run No.	Run No.
depth : percent	depth : percent
2" :	2" :
6" :	6" :
10" :	10" :

DATA SHEET FOR INFILTRATION TESTS

Location: AN - 2
 Project: Closed Basin S20

Part:

Soil:

Surface soil-texture/underlying texture:

Date: 9-8-80Time: 10:30 AM

Time : Tank : Volume : Accum. : Time (hrs) : Infil-
 minutes:reading:into ring:vol. into: between :tration
 (cu. in.) : (in) : ring (in): readings : (in/hr)

RUN NO.	Tank	Volume	Accum.	Time (hrs)	Infil- minutes:reading:into ring:vol. into: between :tration (cu. in.) : (in) : ring (in): readings : (in/hr)
10225	0.5	0	0	0	0
10230	0.6	0.1	0.1	0.063	5
10235	0.6	0.1	0.2	0.063	10
10240	0.6	0.1	0.3	0.063	15
10245	0.6	0.1	0.4	0.063	20
10250	0.6	0.1	0.5	0.063	25
10255	0.6	0.1	0.6	0.063	30
112030	0.6	0.1	0.7	0.063	40
112040	0.6	0.1	0.8	0.167	40
112050	0.6	0.1	0.9	0.167	50
112060	0.6	0.1	1.0	0.167	60
112070	0.6	0.1	1.1	0.167	75
112075	0.6	0.1	1.2	0.167	90
121090	0.6	0.1	1.3	0.250	105
121105	0.6	0.1	1.4	0.250	120
121120	0.6	0.1	1.5	0.250	130
120150	0.6	0.1	1.6	0.250	150
120160	0.7	0.1	1.7	0.250	160
222110	0.7	0.2	1.8	0.250	210
2130240	0.8	0.1	1.9	0.250	240
300270	0.8	0.3	2.0	0.250	270
3130300	0.8	0.3	2.1	0.250	300

Calculations: $\frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$
 Volume into ring = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Notes: For an 18" diam. ring
 Inf. in/hr = $\frac{\text{tank reading} \times 0.0393}{\text{time in hrs.}}$

Soil Moisture

Run No.	Run No.
depth : percent 2":	depth : percent 2":
6":	6":
10":	10":

Infiltration in/hr = .0002 in/hr

DATA SHEET FOR INFILTRATION TESTS

Run - 3

Location:
Project:

Closed Basin Catchment SLC

Date: 9-24-80 Time: 11:30

Time : Tank : Volume : Accum. : Time (hrs) : Infil-

minutes:reading:into ring:vol. into: between : infiltration
(cu. in.) : (in) : ring (in): readings : (in/hr)

RUN NO.	Time	Tank	Volume	Accum.	Time (hrs)	Infil-
					: reading:	minutes:into ring: vol. into: between : infiltration
					ring (in)	cu. in. : ring (in): readings : (in/hr)
11500	05:30	?	?	0	0	0
11535	16.0	.02	.02	0.083	5	0.083
11570	16.2	.02	.04	0.083	10	0.083
11605	16.3	.02	.04	0.083	15	0.083
11620	16.2	.02	.04	0.083	20	0.083
11625	16.2	.02	.04	0.083	25	0.083
11630	16.2	.02	.04	0.083	30	0.083
12040	16.3	.01	.05	0.167	40	0.167
12050	16.3	.01	.05	0.167	50	0.167
12060	16.3	.02	.05	0.167	60	0.167
12075	16.2	.02	.05	0.250	75	0.250
12090	16.4	.01	.06	0.250	90	0.250
12105	16.4	.01	.06	0.250	105	0.250
12120	16.4	.02	.06	0.500	120	0.500
12150	16.4	.02	.06	0.500	150	0.500
12180	16.4	.02	.06	0.500	180	0.500
210				0.500	210	0.500
220				0.500	240	0.500
270				0.500	270	0.500
300				0.500	300	0.500

Calculations:
Volume into ring (in) = $\frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$
Infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$ Notes: For an 18" diam. ring
Inf. in/hr = $\frac{\text{tank reading} - \text{time in hrs.}}{\text{time in hrs.}}$

Soil Moisture

Run No.	Run No.
depth : percent	depth : percent
2"	2"
6"	6"
10"	10"

Inf Rate = .0001 in/hr

DATA SHEET FOR INFILTRATION TESTS

Location: Plot 4
Project: Soil infiltration test

RUN NO.	Date:	Tank	Volume : Accum.	Time (hrs): Infil-
1005	9-25-80	10	0	0
1010		10	0.083	5
1015		10	0.083	10
1020		10	0.063	15
1025		10	0.063	20
1030		10	0.083	25
1035		10	0.083	30
1040		10	0.167	40
1045		10	0.167	50
1050		10	0.167	60
1055		10	0.167	75
1060		10	0.250	90
1065		10	0.250	105
1070		10	0.250	120
1075		10	0.250	150
1080		10	0.250	180
1085		10	0.250	210
1090		10	0.250	240
1095		10	0.250	270
1100		10	0.250	300

Calculations:

$$\text{Volume into ring (in)} = \frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$$

$$\text{Infiltration in/hr} = \frac{\text{volume into ring}}{\text{time (hrs) between readings}}$$

Soil Moisture

Run No.	depth : percent	Run No.	depth : percent
2"		2"	
6"		6"	
10"		10"	

Notes: For an 16" diam. ring
 Inf. in/hr = tank reading $\times 0.00392$
 time in hrs.

$$\text{Inf. Rate} = .0001 \text{ in/hr}$$

DATA SHEET FOR INFILTRATION TESTS

Location: Alluvium
 Project: Classical Project

RUN NO. / Date: 9-30-50 Time:

Time : Tank	Volume : Accum. (hrs)	Time (hrs) : Infilt-
minutes:reading:into ring:vol. into: between :tration	cu. in.) : Ring (in): readings : (in/hr)	cu. in. : ring (in) : ring (in/hr)
0.000	.00	0.00
10.255	.00	0.00
10.310	.00	0.00
10.315	.00	0.00
10.320	.00	0.00
10.325	.00	0.00
10.330	.00	0.00
10.340	.02	0.02
10.350	.02	0.02
10.360	.03	0.03
10.375	.03	0.03
10.390	.04	0.04
10.405	.05	0.05
10.420	.06	0.06
150	.00	0.00
180	.00	0.00
210	.00	0.00
240	.00	0.00
270	.00	0.00
300	.00	0.00

Surface soil texture/underlying texture: Sand

RUN NO.	Time:	Tank	Volume :	Accum. (hrs)	Time (hrs) : Infilt-
			minutes:reading:into ring:vol. into: between :tration	cu. in.) : Ring (in): readings : (in/hr)	cu. in. : ring (in) : ring (in/hr)
0		0			
5		5			
10		10			
15		15			
20		20			
25		25			
30		30			
40		40			
50		50			
60		60			
75		75			
90		90			
105		105			
120		120			
150		150			
180		180			
210		210			
240		240			
270		270			
300		300			

Calculations: Volume into ring (in) = $\frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$
 Infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Soil Moisture	Run No.	Run No.
depth : percent	depth : percent	depth : percent
2"	2"	2"
6"	6"	6"
10"	10"	10"

Notes: For an 18" diam. ring
 Inf. in/hr = $\frac{\text{tank reading} - \text{time in hrs.}}{\text{time in hrs.}}$

Inf. rate = .0001 in/hr.

DATA SHEET FOR INFILTRATION TESTS

Location: Blk - C
Project: 15 sec. Cris' Sod

RUN NO. / Date: 9-25-80 Time: 11:55 P

Time : Tank : Volume : Accum. time (hrs): Infil-
minutes:reading:into ring:vol. into: between infiltration
(cu. in): (in): ring (in): readings : (in/hr)

Run No.	Date	Time	Surface soil texture/underlying texture:	Run No.	Date	Time	Time : tank : Volume : Accum. time (hrs): Infil- minutes:reading:into ring:vol. into: between infiltration (cu. in) : ring (in) : readings : (in/hr)
1120	0	0	0	0	0	0	0
1120	5	8.3	0	0	0.083	5	0.083
1120	10	8.3	0	0	0.083	10	0.083
1120	15	8.3	0	0	0.083	15	0.083
1120	20	8.3	0	0	0.083	20	0.083
1120	25	8.3	0	0	0.083	25	0.083
1120	30	8.3	0	0	0.083	30	0.083
1120	40	8.8	0	0	0.167	40	0.167
2120	50	8.7	0.1	0.1	0.167	50	0.167
2120	60	8.1	0.2	0.1	0.167	60	0.167
2120	75	8.0	0.6	0.2	0.250	75	0.250
2120	90	8.2	0.0	0.2	0.250	90	0.250
2120	105	9.0	0.0	0.2	0.250	105	0.250
2120	120	9.1	0.1	0.3	0.500	120	0.500
2120	150	0	0	0.200	150	0.500	
2120	180	0	0	0.200	180	0.500	
2120	210	0	0	0.500	210	0.500	
2120	240	0	0	0.500	240	0.500	
2120	270	0	0	0.500	270	0.500	
2120	300	0	0	0.500	300	0.500	

Calculations:
Volume into ring (in) = $\frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$
Infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Notes: For an 18" diam. ring
Inf. in/hr = $\frac{\text{tank reading} \times 0.0393}{\text{time in hrs.}}$

Soil Moisture		Run No.	Run No.
depth : percent	depth : percent	2"	2"
6"	6"	6"	6"
10"	10"		

$$\text{Inf Rate} = .0001 \text{ in/hr}$$

DATA SHEET FOR INFILTRATION TESTS

Location: Plot 7
 Project: Chesapeake Project Site SL-11

RUN NO. 26-80 Date: 26-80 Time: 11:50

Time : Tank : Volume : Accum. : Time (hrs) : Infil-
 minutes:reading:into ring:vol. into: between :tration
 (cu. in.) : (in.) : ring (in): readings : (in/hr)

Time	Tank	Volume	Accum.	Time (hrs)	Infil-
(min)	(cu. in.)	into ring	between ring	: reading	minutes:reading:into ring: vol. into: between :tration
11:50	0.0	0	0	0	0
11:55	0.0	0.083	0.083	5	0.083
12:10	0.0	0.083	0.167	10	0.083
12:15	0.0	0.083	0.250	15	0.083
12:20	0.0	0.083	0.333	20	0.083
12:25	0.0	0.083	0.417	25	0.083
12:30	0.01	0.01	0.083	30	0.083
12:35	0.03	0.03	0.167	40	0.167
12:50	0.04	0.04	0.250	50	0.167
12:55	0.05	0.01	0.333	60	0.167
13:00	0.06	0.01	0.417	75	0.250
13:15	0.07	0.01	0.500	90	0.250
13:20	0.08	0.01	0.583	105	0.250
13:25	0.09	0.01	0.667	120	0.500
13:30	0.0	0.0	0.500	150	0.500
13:45	0.0	0.0	0.500	180	0.500
14:00	0.0	0.0	0.500	210	0.500
14:15	0.0	0.0	0.500	240	0.500
14:30	0.0	0.0	0.500	270	0.500
14:45	0.0	0.0	0.500	300	0.500

Calculations:
 Volume into ring (in) = $\frac{1}{4}$ area of ring (sq.in) x tank reading
 Infiltration in/hr = time (hrs) between readings

$$\text{Volume into ring} = \frac{1}{4} \pi r^2 h \times \text{tank reading}$$

Notes: For an 18" diam. ring
 Inf. in/hr = tank reading x .00393
 time in hrs.

Soil Moisture

Run No.	Run No.
depth : percent	depth : percent
2"	2"
6"	6"
10"	10"

Infiltration Rate .0002 in/hr

DATA SHEET FOR INFILTRATION TESTS

Location: All - Black loam soil
Project: Cased Basins (in 5x5)

Party: G. R. & S.
Surface soil texture/underlying texture: SM

RUN NO. Date: 10-11-87 Time: 10:40

Time : Tank	Volume : cu. in.	Accum. : ring (in)	Time (hrs) : minutes:reading:into ring:vol. into: between infiltration (cu. in.)	Time (hrs) : infil- tration (in/hr)
12:453	.05	.05	0.083 : 0	0.083 : 0
12:510	.14	.09	0.083 : 5	0.083 : 0.083
12:515	.18	.04	0.063 : 10	0.063 : 0.063
12:520	.22	.04	0.063 : 15	0.063 : 0
12:525	.28	.06	0.083 : 20	0.083 : 0
12:530	.33	.05	0.083 : 25	0.083 : 0
12:540	.42	.13	0.167 : 30	0.167 : 0
12:545	.61	.12	0.167 : 35	0.167 : 0
12:550	.70	.09	0.167 : 40	0.167 : 0
12:575	.93	.13	0.250 : 50	0.250 : 0
12:590	.96	.13	0.250 : 55	0.250 : 0
12:595	1.11	.15	0.250 : 60	0.250 : 0
12:120	1.29	.18	0.250 : 75	0.250 : 0
12:150	1.68	.39	0.500 : 90	0.500 : 0
12:180	1.95	.27	0.500 : 105	0.500 : 0
2:0210	2.07	.12	0.500 : 120	0.500 : 0
2:0240	2.35	.28	0.500 : 130	0.500 : 0
3:0270	2.64	.29	0.500 : 140	0.500 : 0
3:4300	2.92	.28	0.500 : 150	0.500 : 0

Calculations:

$$\text{Volume into ring (in)} = \frac{1}{\text{area of ring (sq. in.)}} \times \text{tank reading}$$

volume into ring

Infiltration in/hr = time (hrs) between readings

Soil Moisture cut from outside edge of intact.

Run No.	depth : percent	Run No.	depth : percent
2"	:	2"	:
6"	:	6"	:
10"	:	10"	:

Notes: For an 16" diam. ring
Inf. in/hr = tank reading x .00393
time in hrs.

Moisture beginning to soak at 18" +
outside edge not intact.

Inf. Rate = .0025 in/hr

DATA SHEET FOR INFILTRATION TESTS

Location: Ab-9 cistern lake under lawn
 Project: Closed Basin Project

Party: G. S. D. S.

Surface soil texture/underlying texture:

RUN NO.	Time:	RUN NO.	Date:	Time:
11220	00 : 00	11220	10-2-80	Time : Date : Time :
112205	.02 : .02	112205		Time : Tank : Volume : Accum. Time (hrs): Infil- minutes:reading:into ring:vol. into: between infiltration
112210	.06 : .04	112210		minutes:reading:into ring: vol. into: between infiltration
112215	.08 : .02	112215		fcu. in. in. (in) : ring (in) : ring (in) : ring (in)
112220	.11 : .03	112220		0 : 0 : 0 : 0 : 0
112225	.14 : .03	112225		5 : 5 : 0.083 : 0.083 : 0.083
112230	.16 : .02	112230		10 : 10 : 0.083 : 0.083 : 0.083
122220	.21 : .05	122220		15 : 15 : 0.083 : 0.083 : 0.083
122230	.24 : .03	122230		20 : 20 : 0.083 : 0.083 : 0.083
122230	.27 : .03	122230		25 : 25 : 0.083 : 0.083 : 0.083
122235	.34 : .07	122235		30 : 30 : 0.083 : 0.083 : 0.083
122230	.38 : .04	122230		40 : 40 : 0.167 : 0.167 : 0.167
122235	.42 : .04	122235		50 : 50 : 0.167 : 0.167 : 0.167
122240	.47 : .05	122240		60 : 60 : 0.167 : 0.167 : 0.167
122245	.51 : .07	122245		75 : 75 : 0.250 : 0.250 : 0.250
122250	.58 : .04	122250		90 : 90 : 0.250 : 0.250 : 0.250
122255	.62 : .04	122255		105 : 105 : 0.250 : 0.250 : 0.250
122260	.67 : .05	122260		120 : 120 : 0.250 : 0.250 : 0.250
122265	.74 : .07	122265		135 : 135 : 0.250 : 0.250 : 0.250
122270	.80 : .04	122270		150 : 150 : 0.250 : 0.250 : 0.250
122275	.84 : .04	122275		165 : 165 : 0.250 : 0.250 : 0.250
122280	.90 : .05	122280		180 : 180 : 0.250 : 0.250 : 0.250
122285	.94 : .07	122285		195 : 195 : 0.250 : 0.250 : 0.250
122290	.98 : .04	122290		210 : 210 : 0.250 : 0.250 : 0.250
122295	.102 : .04	122295		225 : 225 : 0.250 : 0.250 : 0.250
122300	.106 : .05	122300		240 : 240 : 0.250 : 0.250 : 0.250
122305	.110 : .07	122305		255 : 255 : 0.250 : 0.250 : 0.250
122310	.114 : .04	122310		270 : 270 : 0.250 : 0.250 : 0.250
122315	.118 : .04	122315		285 : 285 : 0.250 : 0.250 : 0.250
122320	.122 : .05	122320		300 : 300 : 0.250 : 0.250 : 0.250

Calculations:
 Volume into ring (in) = $\frac{1}{\pi}$ area of ring (sq. in.) x tank reading
 infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Notes: For an 18" diam. ring
 Inf. in/hr = tank reading x .00393
 time in hrs.

Soil Moisture

Run No.	Run No.
depth : percent	depth : percent
2" :	2" :
6" :	6" :
10" :	10" :

DATA SHEET FOR INFILTRATION TESTS

Location: 2nd-10th Streets
 Project: Closed Circuit S.C.

Party: G.R. & D.S.

Surface soil texture/underlying texture:

RUN NO. Date: 10-6-80 Time:

Time : Tank : Volume : Accum. : Time (hrs) : Infil-
 minutes : reading : into ring : vol. into : between : tration
 (cu. in.) : (in) : ring (in) : readings : (in/hr)

1100	.00	.00	0	0	0
1115	.06	.06	.06	.063	.063
11210	.12	.06	.12	.063	.063
11215	.20	.08	.20	.063	.063
11220	.29	.09	.29	.063	.063
113425	.38	.09	.38	.063	.063
114430	.46	.08	.46	.063	.063
115240	.60	.14	.60	.167	.167
120050	.80	.20	.80	.167	.167
121060	.98	.18	.98	.167	.167
122575	1.21	.33	1.31	.250	.250
123090	1.51	.10	1.51	.250	.250
124095	1.71	.22	1.71	.250	.250
110120	2.04	.33	2.04	.500	.500
144250	2.59	.55	2.59	.500	.500
144260	3.08	.45	3.08	.500	.500
210				.500	.500
240				.500	.500
270				.500	.500
300				.500	.500

Notes: 1. Water falling from tank

Calculations:
 Volume into ring (in^3) = $\frac{1}{4} \pi \text{ area of ring (sq. in.)} \times \text{tank reading}$
 Infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Time : Tank : Volume : Accum. : Time (hrs) : Infil-
 minutes : reading : into ring : vol. into : between : tration
 (cu. in.) : (in) : ring (in) : readings : (in/hr)

Time in hrs.

Soil Moisture

Run No.	Run No.
depth : percent	depth : percent
2":	2":
6":	6":
10":	10":

Infiltration Rate = .004 in/hr

Time in hrs.

DATA SHEET FOR INFILTRATION TESTS

Location: Aug-11 Wetlands
 Project: Closed Basin SIV

Party: _____
 Surface soil texture/underlying texture: _____

Date: 10-7-80Time: 10:00

TIN NO. Time : Accum. Time (hrs): Infil-
 minutes:reading:into ring:vol. into: between :tration
 (cu. in); (in); ring (in): readings : (in/hr)

RUN NO.	Time:	Tank : Volume :	Accum. Time (hrs):	Infil- minutes:reading:into ring:vol. into: between :tration cu. in); (in); ring (in): readings : (in/hr)	Date:	Time:
0				0		
5		0.083 :		0		0.083 :
10		0.083 :		0		0.083 :
15		0.063 :		0		0.063 :
20		0.063 :		0		0.063 :
25		0.083 :		0		0.083 :
30		0.083 :		0		0.083 :
40		0.167 :		0		0.167 :
50		0.167 :		0		0.167 :
60		0.167 :		0		0.167 :
75		0.250 :		0		0.250 :
90		0.250 :		0		0.250 :
105		0.250 :		0		0.250 :
120		0.500 :		0		0.500 :
150		0.500 :		0		0.500 :
180		0.500 :		0		0.500 :
210		0.500 :		0		0.500 :
240		0.500 :		0		0.500 :
270		0.500 :		0		0.500 :
300		0.500 :		0		0.500 :

Calculations:
 Volume into ring (in) = $\frac{1}{4} \pi \text{ area of ring (sq. in.)} \times \text{ tank reading}$
 volume into ring
 Infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Notes: For an 16" diam. ring
 Inf. in/hr = $\frac{\text{ring reading} \times 0.00393}{\text{time in hrs.}}$

No test run - unable to get the
 side with vehicle.

Run. No.	Soil Moisture	Run. No.
depth : percent		depth : percent
2"		2"
6"		6"
10"		10"

DATA SHEET FOR INFILTRATION TESTS

Location: Aer-12 Wetland
Project: Closed Circuit SCS

Party: Gib & P-S
Surface soil texture/underlying texture:

RUN NO.	DATE:	T-80	Time:	RUN NO.	DATE:	Time:	TANK :	VOLUME :	ACCUM. TIME (HRS) :	INFIL-MINUTES:READING:INTO RING:VOL. INTO:VOL. INTO:BEWEEN T-80	TIME (HRS) :	INFIL-MINUTES:READING:INTO RING:VOL. INTO:VOL. INTO:BEWEEN T-80	TIME (HRS) :
1120	00	—	—	0	0	0	0	0	0	0	0	0	0
11205	00	—	—	0	0	5	0	0	0	0	0.033	0	0.033
11210	00	—	—	0	0	10	0	0	0	0	0.033	0	0.033
11215	02	0.2	0.2	0	0	15	0	0	0	0	0.063	0	0.063
11220	03	0.1	0.3	0	0	20	0	0	0	0	0.093	0	0.093
11225	04	0.1	0.4	0	0	25	0	0	0	0	0.093	0	0.093
11230	05	0.1	0.5	0	0	30	0	0	0	0	0.093	0	0.093
11235	06	0.1	0.6	0	0	40	0	0	0	0	0.167	0	0.167
11240	05	0.1	0.5	0	0	50	0	0	0	0	0.167	0	0.167
11245	06	0.1	0.6	0	0	60	0	0	0	0	0.167	0	0.167
11250	07	0.1	0.7	0	0	75	0	0	0	0	0.250	0	0.250
11255	07	0.1	0.7	0	0	90	0	0	0	0	0.250	0	0.250
11260	08	0.1	0.8	0	0	105	0	0	0	0	0.250	0	0.250
11265	09	0.1	0.9	0	0	120	0	0	0	0	0.250	0	0.250
11270	10	0.1	1.0	0	0	150	0	0	0	0	0.500	0	0.500
11275	10	0.1	1.0	0	0	180	0	0	0	0	0.500	0	0.500
11280	—	—	—	0	0	210	0	0	0	0	0.500	0	0.500
11285	—	—	—	0	0	240	0	0	0	0	0.500	0	0.500
11290	—	—	—	0	0	270	0	0	0	0	0.500	0	0.500
11295	—	—	—	0	0	300	0	0	0	0	0.500	0	0.500

Calculations:
Volume into ring (in) = $\frac{1}{\text{area of ring (sq. in.)}} \times \text{tank reading}$

Infiltration $\text{in/hr} = \frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Soil Moisture

Run No.	depth : percent	Run No.	depth : percent
2"	—	2"	—
6"	—	6"	—
10"	—	10"	—

Notes: For an 16" diam. ring
Inf. in/hr = tank reading x .00393
time in hrs.

$$Inf. Rate = .0002 \text{ in/hr}$$

DATA SHEET FOR INFILTRATION TESTS.

Location: Vicksburg, Miss. - S-1
 Project: Closed Basin

RUN NO. Date: 4-10-79 Time: 10:45

Time : Tank	: Volume :	Accum.:	Time (hrs):	Infil-
minutes: reading: into ring: vol. into: between :tration	(cu. in.)	(in)	ring: (in)	minutes: reading: into ring: vol. into: between :tration
0 : 00	0.00	0	0 : 00	0
5 : 00	0.35	0.083	5 : 00	0.083
10 : 0.45	0.10	0.45	10 : 0.5	0.45
15 : 0.16	0.25	0.70	15 : 0.10	0.90
20 : 0.40	0.10	0.50	20 : 0.15	0.60
25 : 1.00	0.30	1.00	25 : 0.10	0.00
30 : 1.10	0.20	1.50	30 : 0.10	0.00
40 : 1.25	0.15	1.75	40 : 0.10	0.05
50 : 3.90	0.65	0.167	50 : 0.10	0.00
60	-	0.167	60 : 0.15	0.05
75	-	0.250	75 : 0.15	0.00
90	-	0.250	90 : 0.15	0.00
105	-	0.250	105 : 0.15	0.00
120	-	0.500	120 : 0.40	0.35
130	-	0.500	130 : 0.50	0.10
140	-	0.500	140 : 0.50	0.00
150	-	0.500	150 : 0.50	0.00
160	-	0.500	160 : 0.50	0.00
170	-	0.500	170 : 0.50	0.00
180	-	0.500	180 : 0.50	0.00
190	-	0.500	190 : 0.50	0.00
200	-	0.500	200 : 0.50	0.00
210	-	0.500	210 : 0.50	0.00
220	-	0.500	220 : 0.50	0.00
230	-	0.500	230 : 0.50	0.00
240	-	0.500	240 : 0.50	0.00
250	-	0.500	250 : 0.50	0.00
260	-	0.500	260 : 0.50	0.00
270	-	0.500	270 : 0.50	0.00
280	-	0.500	280 : 0.50	0.00
290	-	0.500	290 : 0.50	0.00

Calculations:

$$\text{Volume into ring (in)} = \frac{1}{\pi} \text{ area of ring (sq. in.)} \times \text{tank reading}$$

$$\text{Infiltration rate} = \frac{\text{volume into ring}}{\text{time (hrs) between readings}}$$

Run No.	Soil Moisture	Run No.	depth : percent
2"		2"	
6"		6"	
10"		10"	

party: Kerrville
 surface soil texture/underlying texture: Clay/Sand

Date: April 14, 1980 Time: 10:45

RUN NO.	Time : Tank	: Volume :	Accum.:	Time (hrs):	Infil-
	minutes: reading: into ring: vol. into: between :tration	(cu. in.)	(in)	ring (in)	minutes: reading: into ring: vol. into: between :tration
0 : 00	0.00	0	0 : 00	0	0
5	0.05	0.05	5 : 00	0.05	0.083
10	0.10	0.05	10 : 0.10	0.10	0.083
15	0.15	0.05	15 : 0.10	0.90	0.083
20	0.20	0.10	20 : 0.15	0.80	0.083
25	0.25	0.10	25 : 0.10	0.00	0.00
30	0.30	0.10	30 : 0.10	0.00	0.00
40	0.40	0.10	40 : 0.10	0.05	0.10
50	0.50	0.10	50 : 0.10	0.10	0.167
60	0.60	0.15	60 : 0.15	0.15	0.167
75	0.75	0.15	75 : 0.15	0.00	0.250
90	0.90	0.15	90 : 0.15	0.00	0.250
105	1.05	0.15	105 : 0.15	0.15	0.250
120	1.20	0.40	120 : 0.40	0.40	0.500
130	1.30	0.50	130 : 0.50	0.50	0.500
140	1.40	0.50	140 : 0.50	0.50	0.500
150	1.50	0.50	150 : 0.50	0.50	0.500
160	1.60	0.50	160 : 0.50	0.50	0.500
170	1.70	0.50	170 : 0.50	0.50	0.500
180	1.80	0.50	180 : 0.50	0.50	0.500
190	1.90	0.50	190 : 0.50	0.50	0.500
200	2.00	0.50	200 : 0.50	0.50	0.500
210	2.10	0.50	210 : 0.50	0.50	0.500
220	2.20	0.50	220 : 0.50	0.50	0.500
230	2.30	0.50	230 : 0.50	0.50	0.500
240	2.40	0.50	240 : 0.50	0.50	0.500
250	2.50	0.50	250 : 0.50	0.50	0.500
260	2.60	0.50	260 : 0.50	0.50	0.500
270	2.70	0.50	270 : 0.50	0.50	0.500
280	2.80	0.50	280 : 0.50	0.50	0.500
290	2.90	0.50	290 : 0.50	0.50	0.500

Notes: For 23 16" diam. ring
 Inf. 1hr = tank reading x .00393
 time in hrs.

$$\text{Inf. Rate} = .0005710/\text{hr.}$$

DATA SHEET FOR INFILTRATION TESTS

Location: TW 3-1

Project: CLOSED BASIN

Run No. 2 Date: 6-9-80 Time: 10:25

Time	Tank	Volume	Accum.	Time (hrs)	Infiltration
10:25	0	0.00	0.00	0	
10:30	5	0.00	0.00	0.05	0.083
10:35	10	0.20	0.20	0.10	0.083
10:40	15	0.40	0.40	0.15	0.083
10:45	20	0.60	0.60	0.20	0.083
10:50	25	0.70	0.70	0.25	0.083
10:55	30	0.80	0.80	0.30	0.083
11:00	40	0.95	0.95	0.35	0.083
11:05	50	1.10	1.10	0.40	0.083
11:10	60	1.20	1.20	0.45	0.083
11:15	75	1.35	1.35	0.50	0.083
11:20	90	1.45	1.45	0.55	0.083
11:25	105	1.55	1.55	0.60	0.083
11:30	120	1.60	1.60	0.65	0.083
11:35	130	1.70	1.70	0.70	0.083
11:40	140	1.75	1.75	0.75	0.083
11:45	150	1.80	1.80	0.80	0.083
11:50	160	1.85	1.85	0.85	0.083
11:55	170	1.90	1.90	0.90	0.083
12:00	180	1.95	1.95	0.95	0.083
12:05	190	2.00	2.00	1.00	0.083
12:10	200	2.05	2.05	1.05	0.083
12:15	210	2.10	2.10	1.10	0.083
12:20	220	2.15	2.15	1.15	0.083
12:25	230	2.20	2.20	1.20	0.083
12:30	240	2.25	2.25	1.25	0.083
12:35	250	2.30	2.30	1.30	0.083
12:40	260	2.35	2.35	1.35	0.083
12:45	270	2.40	2.40	1.40	0.083
12:50	280	2.45	2.45	1.45	0.083
12:55	290	2.50	2.50	1.50	0.083
13:00	300	2.55	2.55	1.55	0.083

Calculations:
 Volume into ring (in) = $\frac{1}{\text{area of ring (sq.in.)}} \times \text{tank reading}$
 Infiltration in/hr = $\frac{\text{volume into ring}}{\text{time (hrs) between readings}}$

Notes: For an 16" diam. ring
 Inf. in/hr = tank reading x .00393
 time in hrs.

Soil Moisture	Run No.	Run No.
depth : percent	depth : percent	depth : percent
2"	2"	2"
6"	6"	6"
10"	10"	10"

11/17/77

DATA SHEET FOR INFILTRATION TESTS

Location: T.C.-3-1
Project: Closed Basin Project SLC

Date: 9-26-60 Time: 0:00
Part: C.P.M.R.

Surface soil texture/underlying texture:

RUN NO. 4 Date: 9-26-60 Time: 0:00

Time : Tank : Volume : Accum. : Time (hrs) : Infiltration minutes: reading:into ring: vol. into: between : infiltration (cu. in) : ring (in) : readings : (in/hr)

Run No.	Time	Volume	Accum.	Time (hrs)	Infiltration	minutes: reading:into ring: vol. into: between : infiltration	(cu. in) : ring (in) : readings : (in/hr)
10:00	1:4	0	0	0	0	0	0
10:5	1:5	0.1	0.1	0.053	0.053	5	0.033
10:10	1:5	0.1	0.1	0.083	0.083	10	0.033
10:15	1:5	0.0	0.1	0.063	0.063	15	0.033
10:20	1:5	0.0	0.1	0.053	0.053	20	0.033
10:25	1:6	0.1	0.2	0.063	0.063	25	0.033
10:30	1:6	0.0	0.2	0.083	0.083	30	0.033
10:40	1:6	0.0	0.2	0.167	0.167	40	0.162
10:50	1:6	0.0	0.2	0.167	0.167	50	0.162
11:00	1:6	0.0	0.2	0.167	0.167	60	0.162
11:15	1:6	0.0	0.2	0.250	0.250	72	0.250
11:30	1:7	0.1	0.3	0.250	0.250	90	0.250
11:45	1:7	0.0	0.3	0.250	0.250	105	0.250
12:00	1:7	0.0	0.3	0.500	0.500	120	0.500
12:15	1:7	0.0	0.3	0.500	0.500	150	0.500
12:30	1:7	0.0	0.3	0.500	0.500	180	0.500
13:00	1:7	0.0	0.3	0.500	0.500	210	0.500
13:21	1:7	0.0	0.3	0.500	0.500	240	0.500
13:42	1:7	0.0	0.3	0.500	0.500	270	0.500
14:00	1:8	0.1	0.4	0.500	0.500	300	0.500

Calculations:
Volume into ring (in) = $\frac{1}{4}$ area of ring (sq.in.) \times tank reading
Infiltration in/hr = time (hrs) between readings

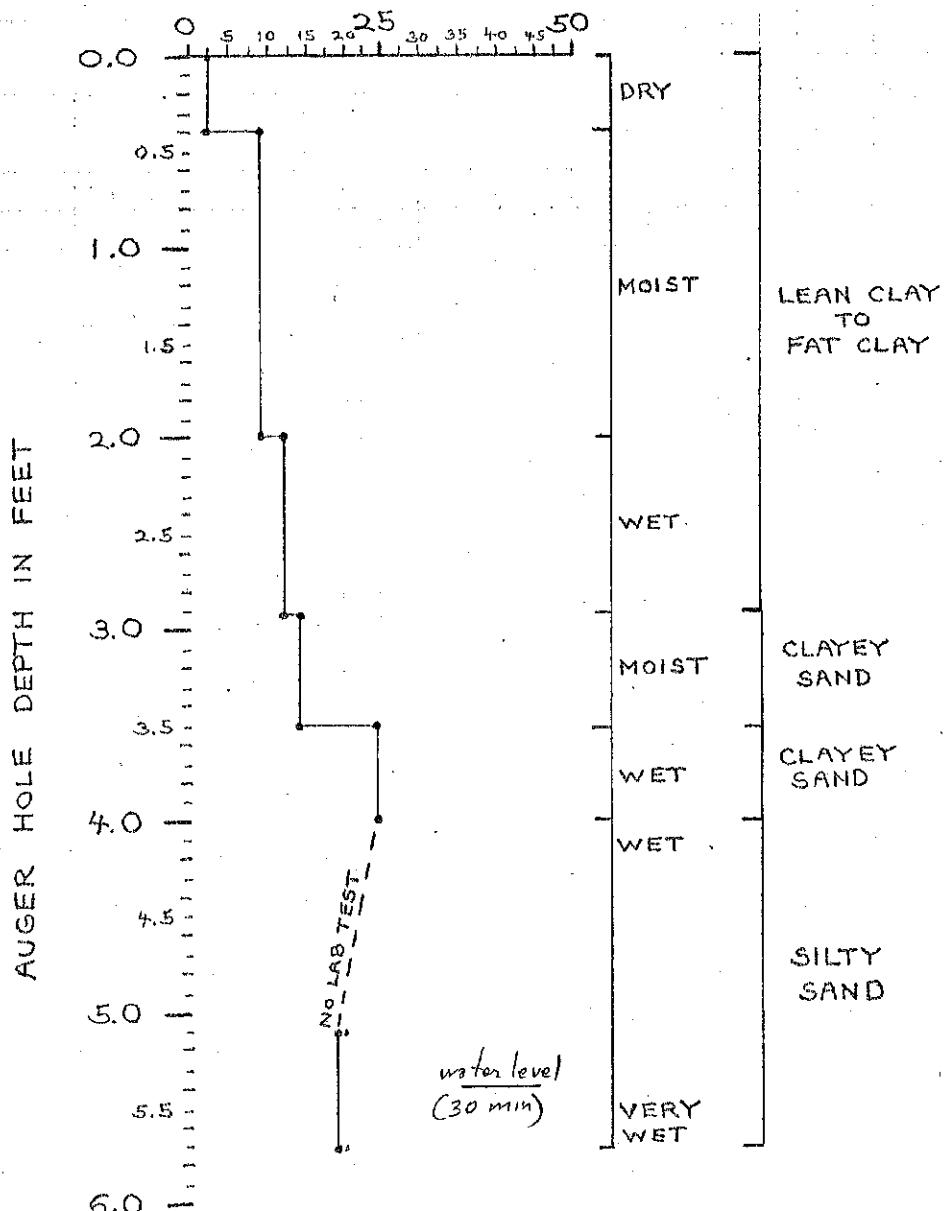
Notes: Por an 16" dia. ring
Inf. in/hr = tank reading \times time in hrs.

Soil Moisture	Run No.	depth : percent
	Run No.	depth : percent
2"	2"	2"
6"	6"	6"
10"	10"	10"

COMPUTATION SHEET

BY	DATE	PROJECT	CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE	AW-1	
DETAILS				

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS

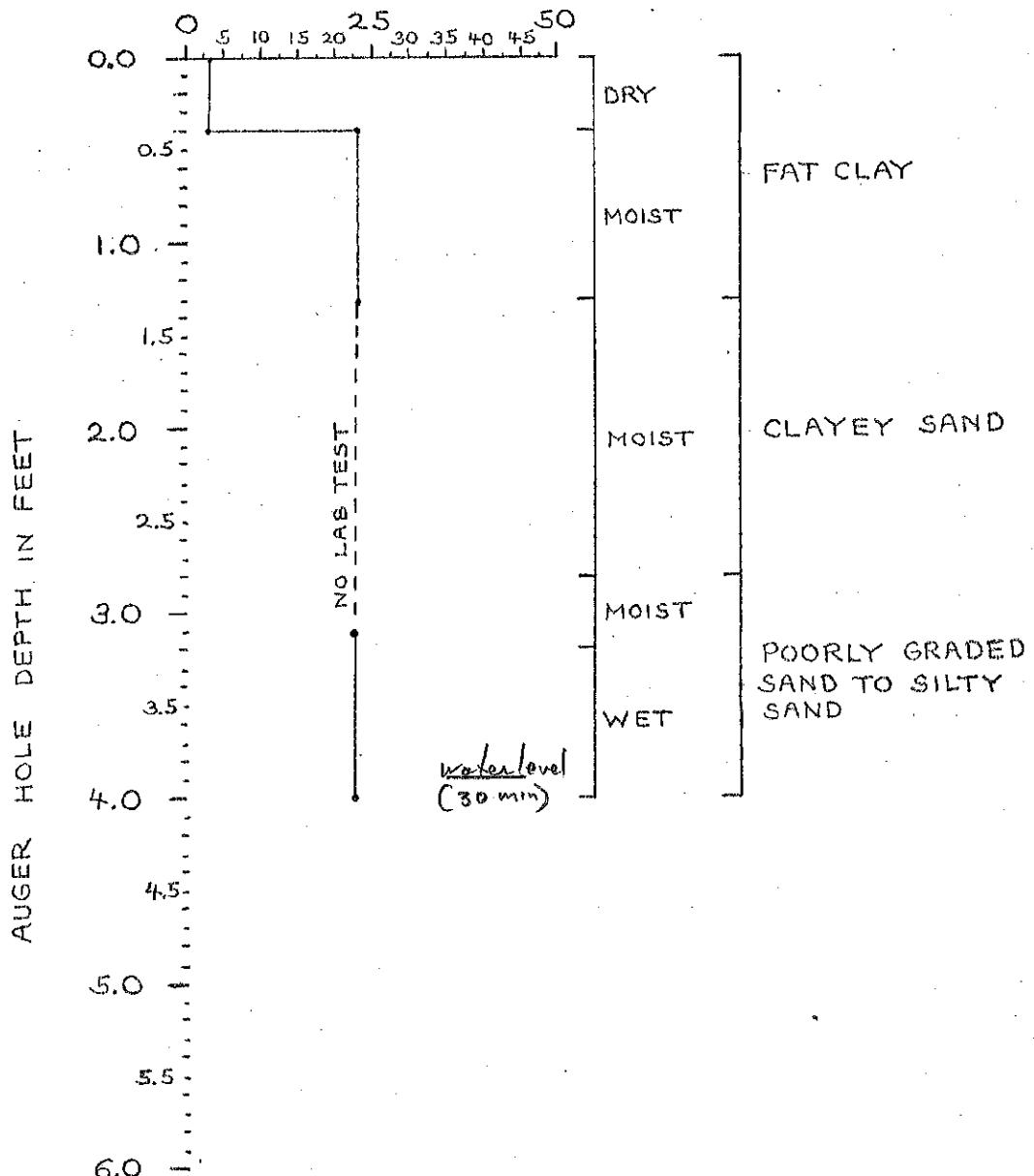


COMPUTATION SHEET

* U.S. Government Printing Office: 1977-779-651

BY	DATE	PROJECT	CLOSED BASIN	SHEET	OF
CHKD BY	DATE	FEATURE	AW-2		
DETAILS					

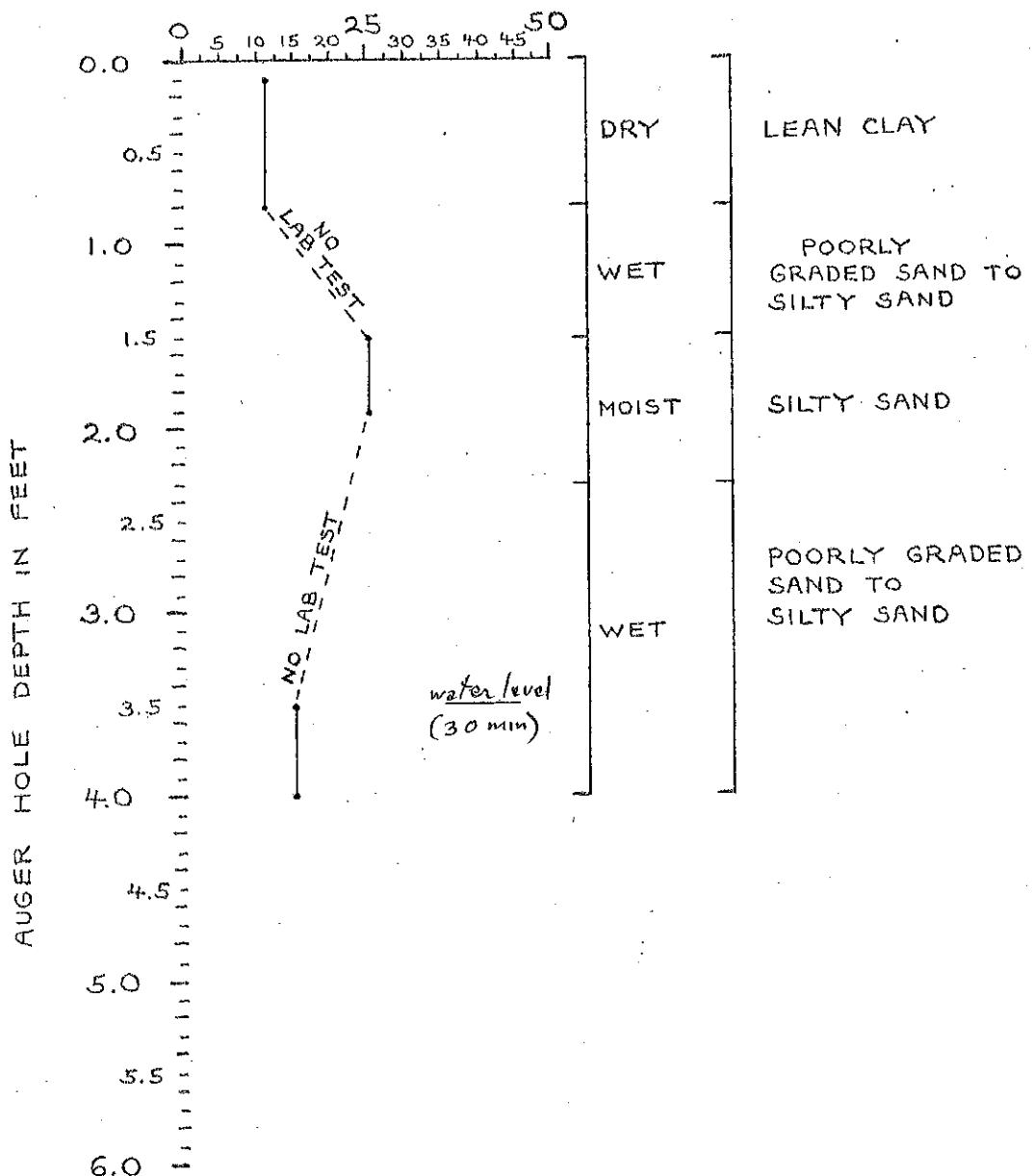
PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



COMPUTATION SHEET

BY	DATE	PROJECT	CLOSED BASIN	SHEET <u> </u> OF <u> </u>
CHKD BY	DATE	FEATURE	AW-3	
DETAILS				

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS

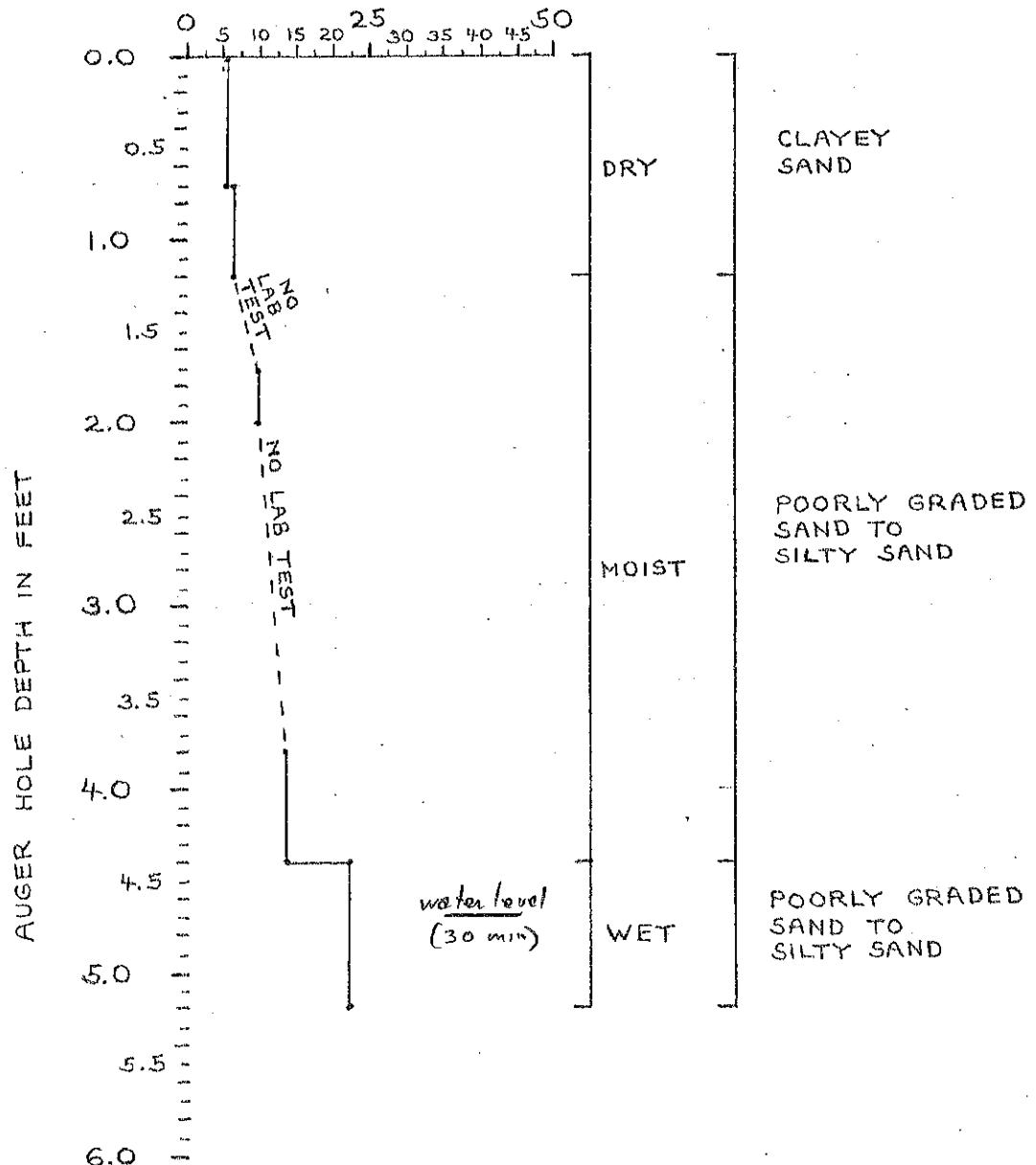


COMPUTATION SHEET

* U.S. Government Printing Office: 1977-779-651

BY	DATE	PROJECT	CLOSED BASIN	SHEET <u> </u> OF <u> </u>
CHKD BY	DATE	FEATURE	AW-4	
DETAILS				

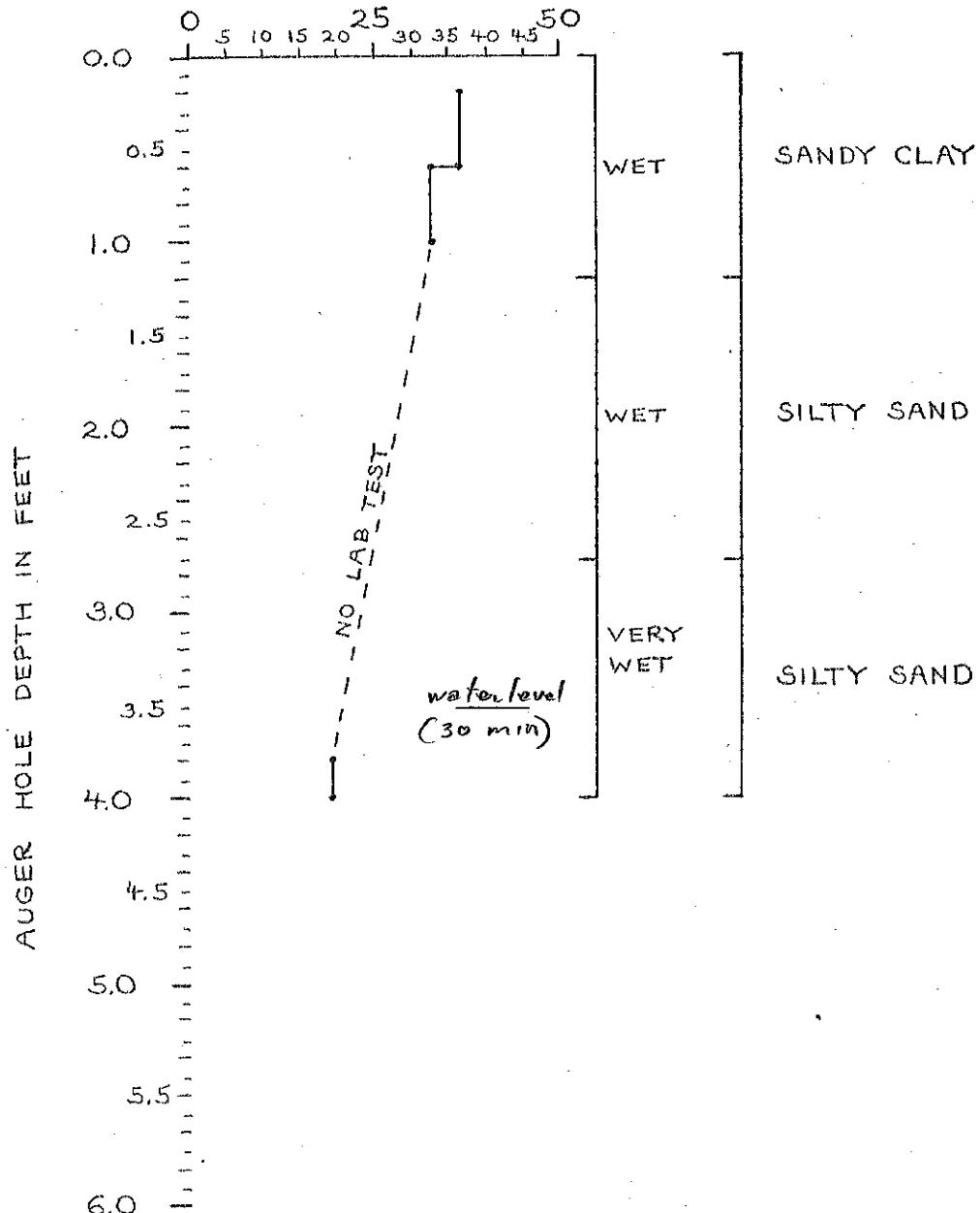
PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



COMPUTATION SHEET

BY	DATE	PROJECT	CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE	AW - 5	
DETAILS				

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS

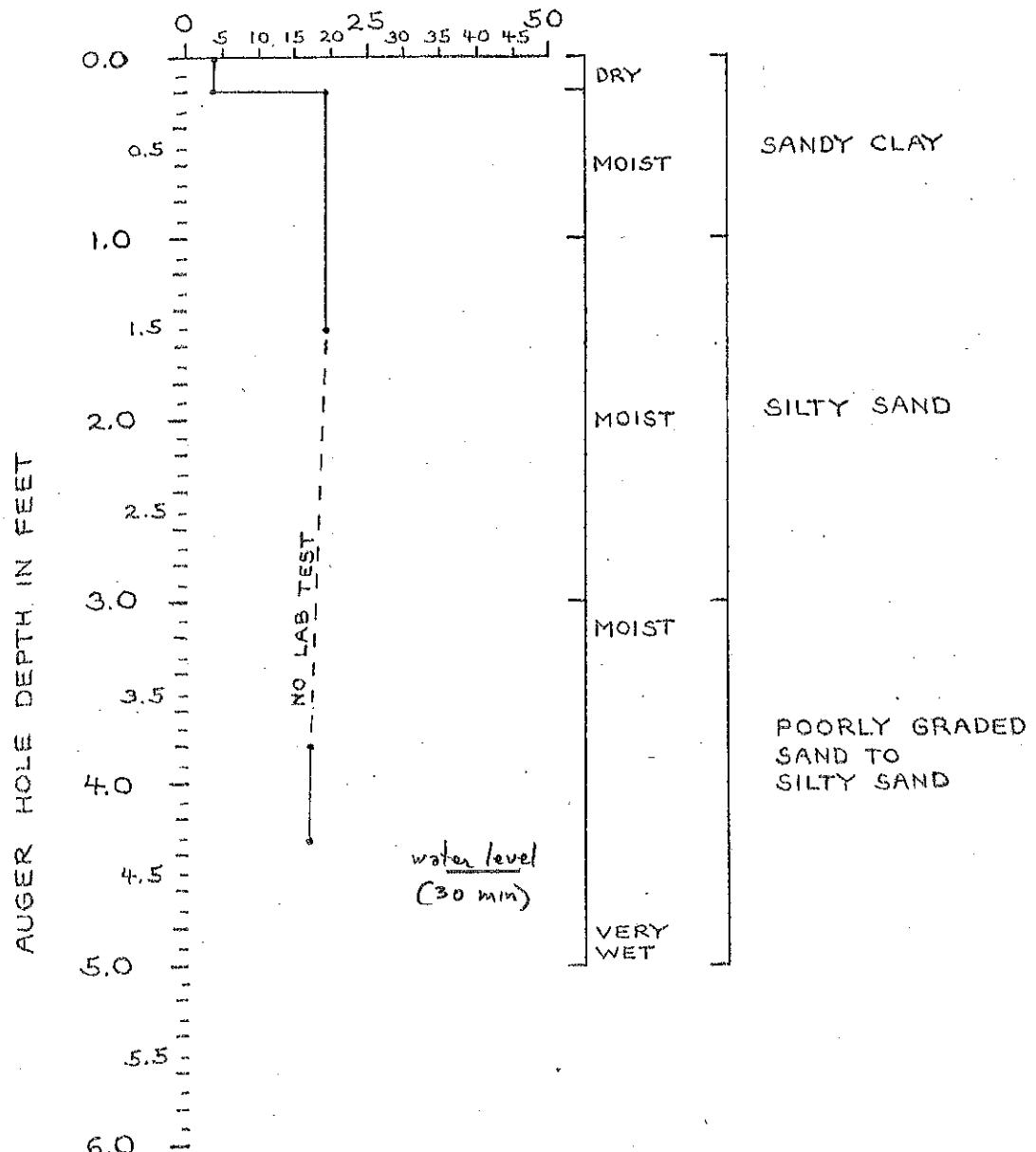


COMPUTATION SHEET

* U.S. Government Printing Office: 1977-779-651

BY	DATE	PROJECT	CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE	AW - 6	
DETAILS				

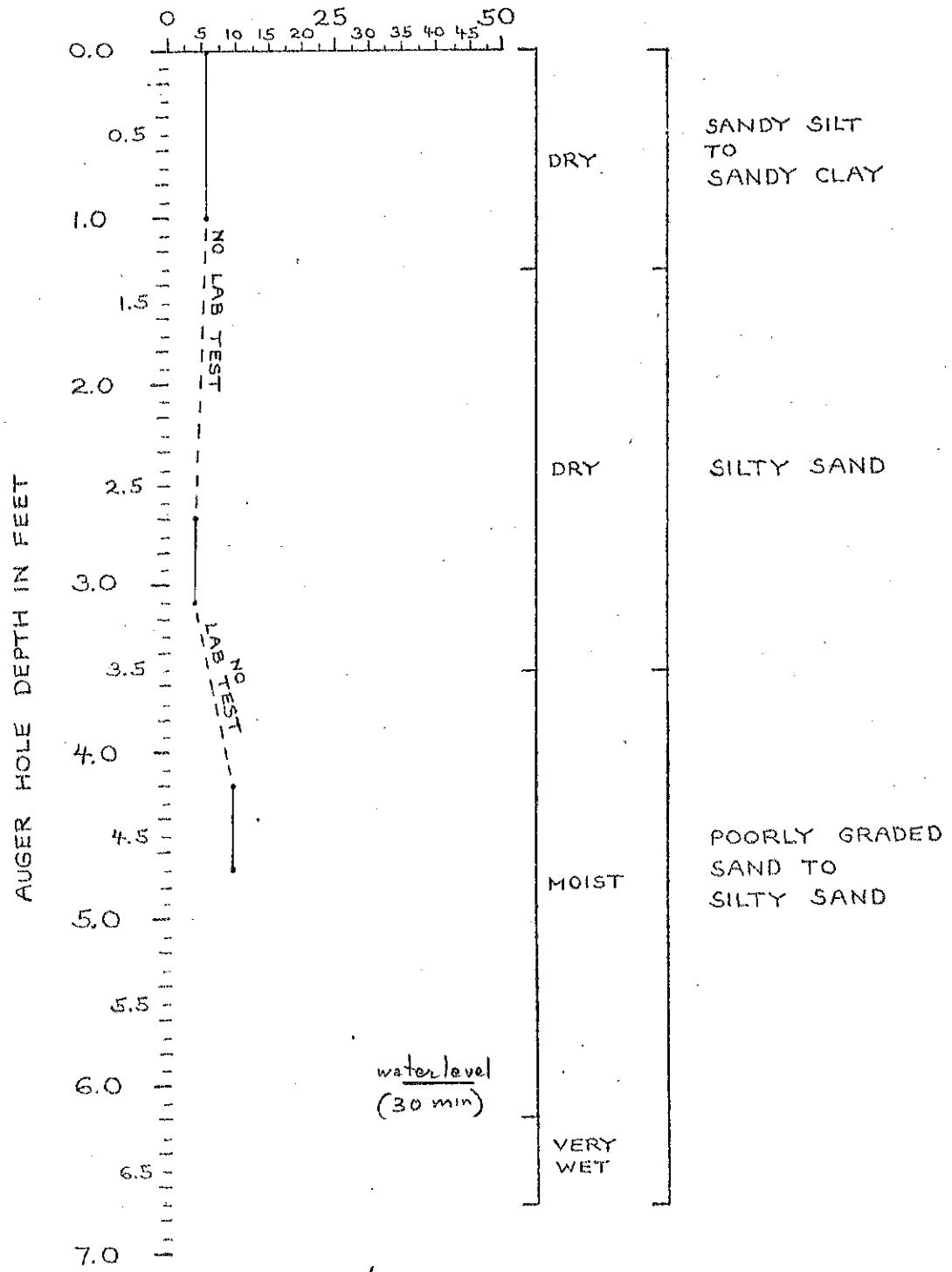
PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



COMPUTATION SHEET

BY	DATE	PROJECT	CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE	AW-7	
DETAILS				

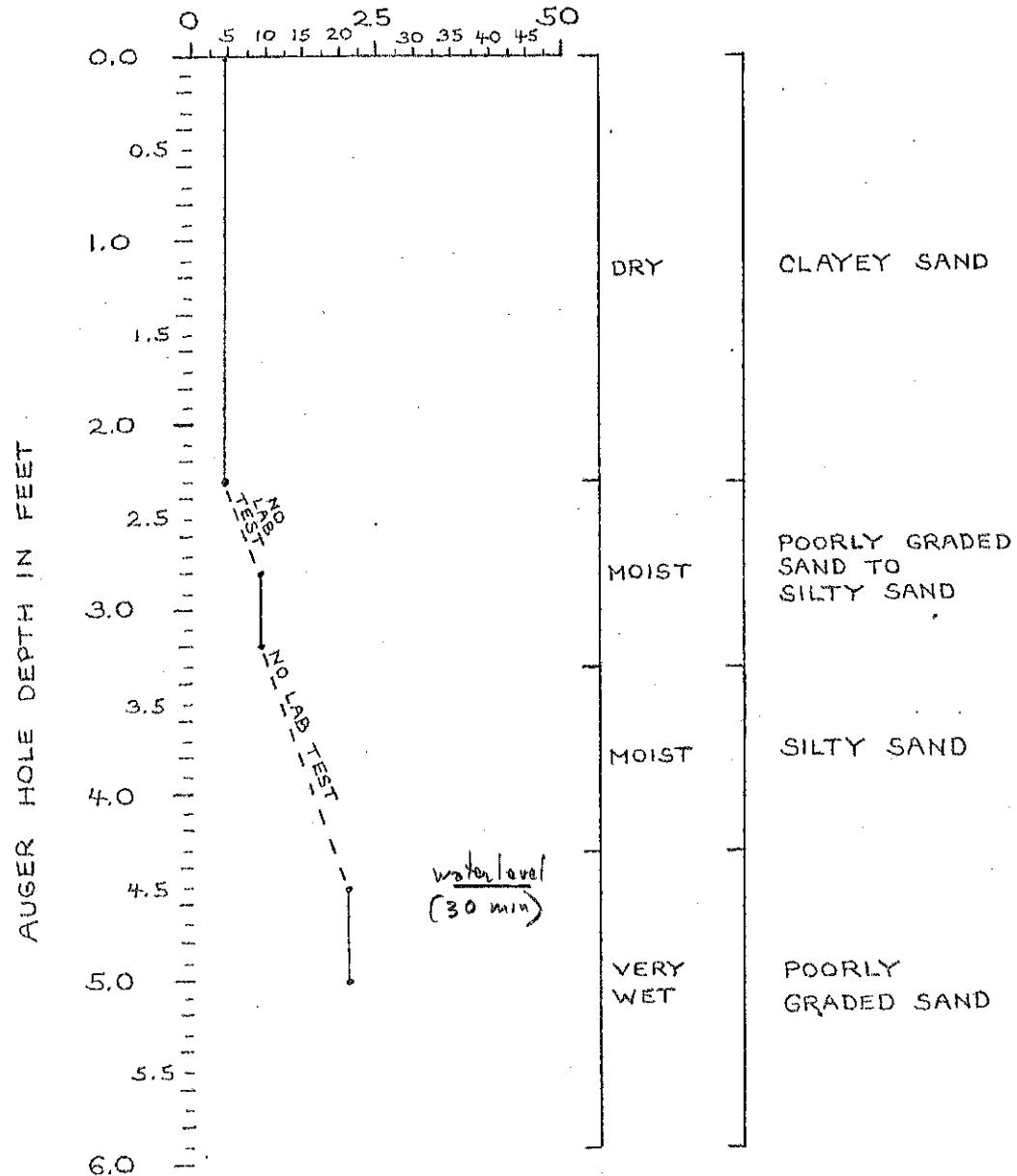
PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



COMPUTATION SHEET

BY	DATE	PROJECT	CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE	AW-8	
DETAILS				

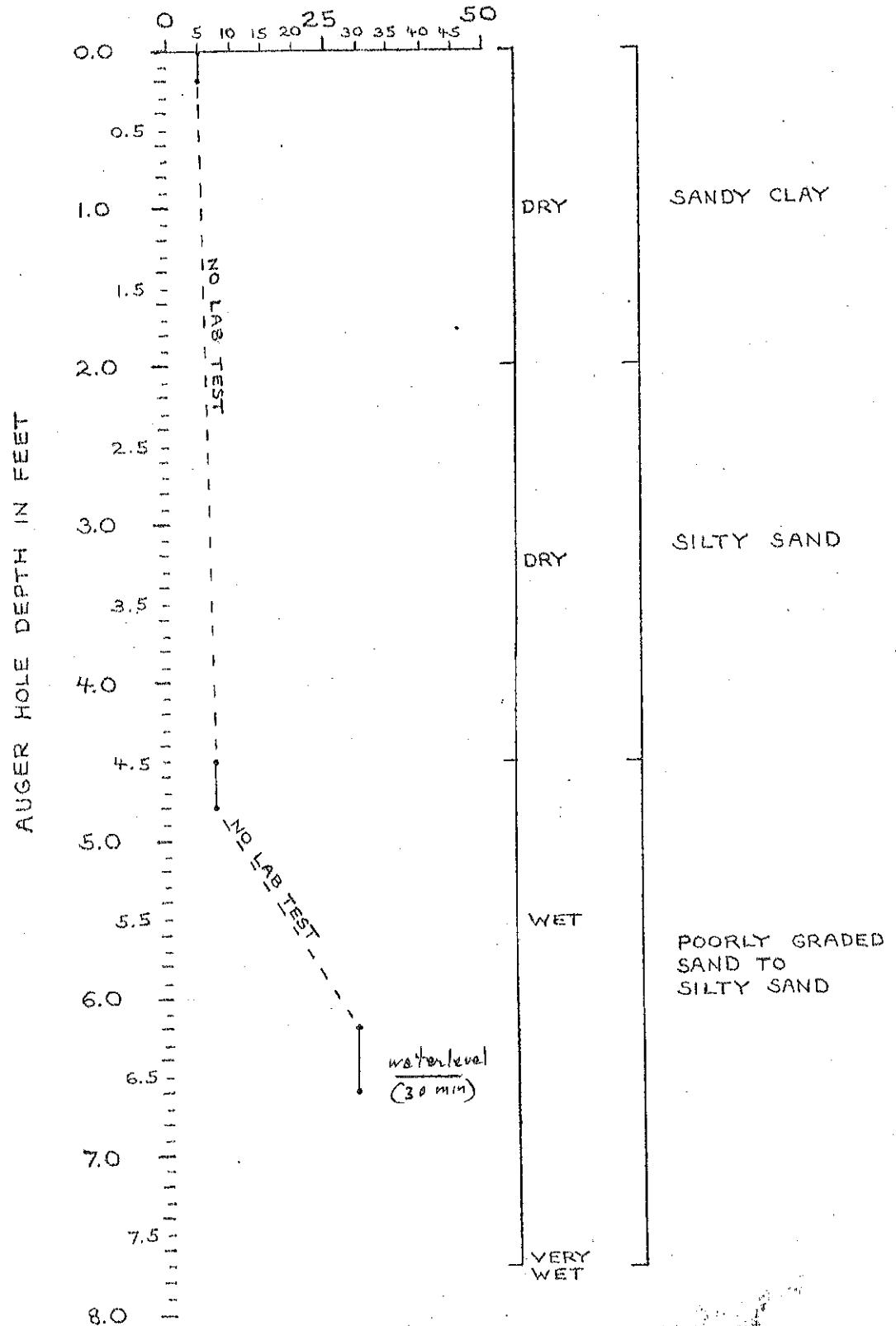
PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



COMPUTATION SHEET

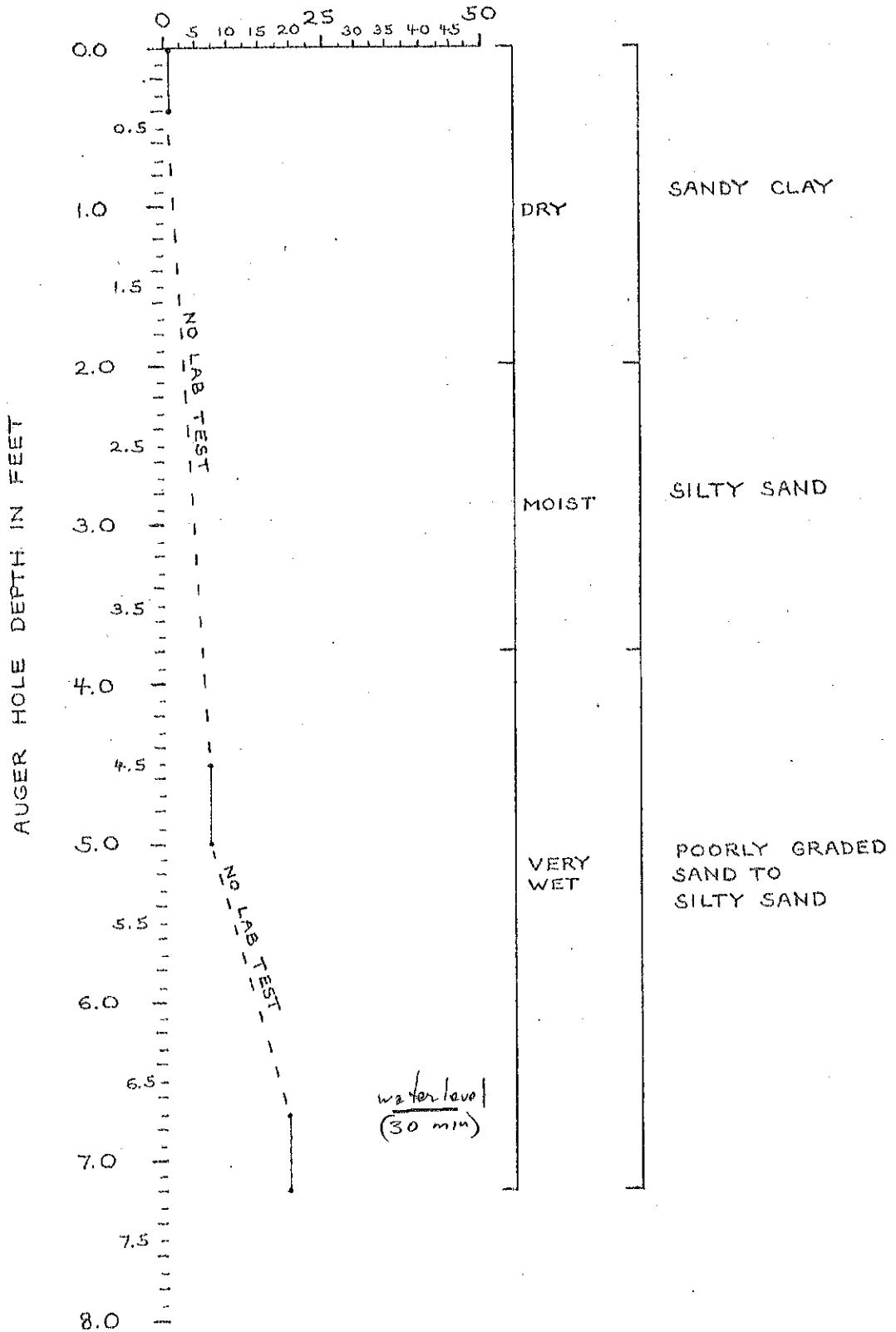
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CHKD BY	DATE	FEATURE	AW-9	
DETAILS				

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



COMPUTATION SHEET

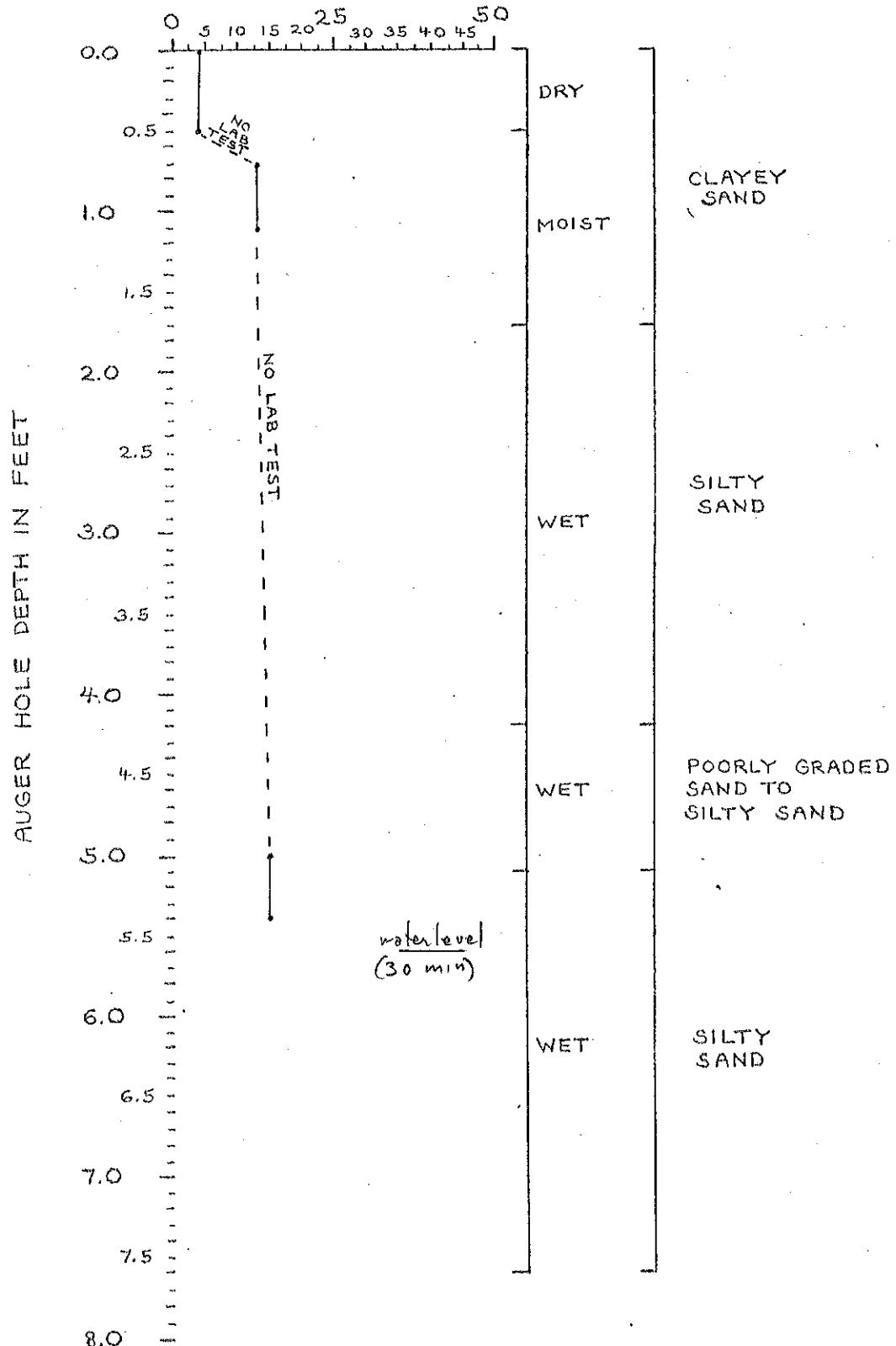
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CHKD BY	DATE	FEATURE	AW-10	
DETAILS				

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS

COMPUTATION SHEET

BY	DATE	PROJECT CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE AW-11	
DETAILS			

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS

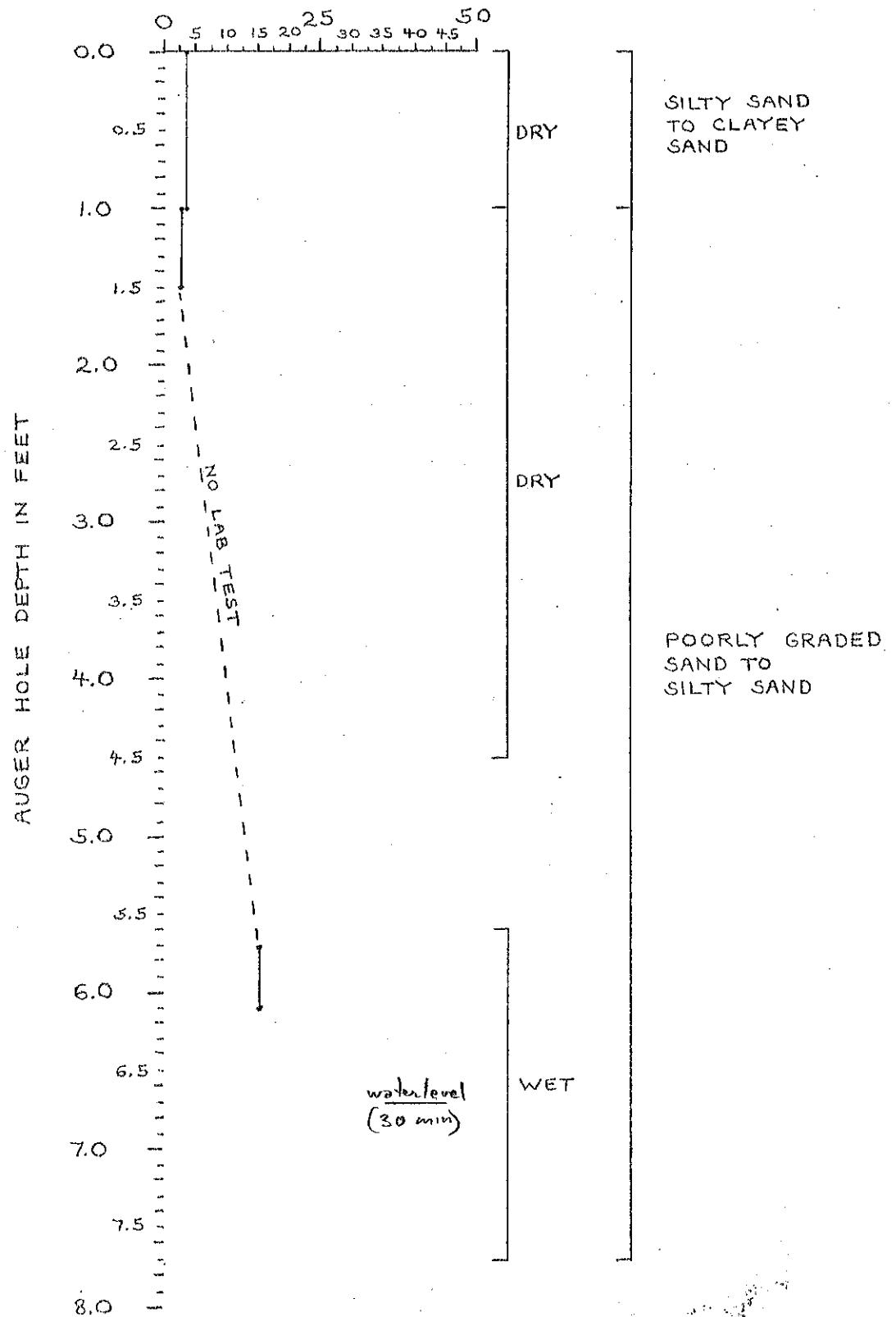


COMPUTATION SHEET

* U.S. Government Printing Office: 1977-779-651

BY	DATE	PROJECT CLOSED BASIN	SHEET ____ OF ____
CHKD BY	DATE	FEATURE AW-12	
DETAILS			

PERCENT MOISTURE
WITH FIELD DESCRIPTIONS



Sheet 1 of 2

~~TEST~~ AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Feature Hill's Branches

Project

Chester Basin

Area Designation CL-C

Approx. Dimensions 100' X 100'

Date Aug 1, 1957

Stand Elevation 84-250-800

Method of Excavation Hand shovel

Date Aug 1, 1957

Excavated by John C. Gandy

Depth to Water Level¹ 5.4 - Foot

Depth to Bottom of Hole 20.0 - Foot

CLASSIFICATION AND DESCRIPTION OF MATERIAL
(SEE CHART - "UNIFIED SOIL CLASSIFICATION"
GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)

PERCENTAGE OF COBBLES AND SOULDERS **

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	VOLUME OF SOIL SAMPLED 3 TO 5-INCH CUBIC FEET	WEIGHT OF SOIL SAMPLED (LESS THAN 1000 SAMPLED (LESS THAN 1000	PERCENTAGE BY WEIGHT OF 5-INCH VOLUME OF PLUS 5-INCH VOLUME OF
CL-CA	2.9	-	0 - 10' light brownish tan to light brownish tan, fine sand, some silt, few small pebbles, no gravel, very friable, dry, firm, no fissures, no joints, brownish tan to light brownish tan from 2.0' to 2.9'	1.00	0
SC	3.2	-	3.0 - 4.0' brownish tan to light brownish tan, fine sand, some silt, few small pebbles, no gravel, very friable, dry, firm, no fissures, no joints, brownish tan to light brownish tan from 2.0' to 3.2'	1.00	0
SC	5.7	1.00 lbs/ft ³	5.7 - 6.7' brownish tan to light brownish tan, fine sand, some silt, few small pebbles, no gravel, very friable, dry, firm, no fissures, no joints, brownish tan to light brownish tan from 2.0' to 5.7'	1.00	0
SM	-	-	6.7 - 20.0' brownish tan to light brownish tan, fine sand, some silt, few small pebbles, no gravel, very friable, dry, firm, no fissures, no joints, brownish tan to light brownish tan from 2.0' to 20.0'	1.00	0
REMARKS:					

NOTES: Record water test and density test data, if applicable, under remarks.

** (Lbs. of rock sampled) 100

*** Bulk specific gravity of rock 2.64 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

*** Record how obtained (measured or estimated).

Sheet 2 of 2

LOG OF AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS

Feature *Wet Grounds*

Date No. *440-1*

Project *Closed Basin*

Area Designation

Coordinates N. *5.4 - 100*

Easting

Azimuth *55 X 55.7*

Bearing

Apex Distances *0.5 X 55.7*

Legend by *CD*

Method of Excavation *Auger*

Date *8-28-80*

CLASSIFICATION AND DESCRIPTION OF MATERIAL
(SEE CHART - UNIFIED SOIL CLASSIFICATION)
GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATION

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	VOLUME OF SAMPLED 3 TO 5-INCH (CUBIC FEET)	PERCENTAGE OF COBBLES AND BOULDERS **
LETTER	GRAPHIC		WEIGHT OF SAMPLED LESS THAN 5-INCHES TO 5-INCHES (CUBIC FEET)	WEIGHT OF PLUS 5-INCHES (CUBIC FEET)
		Soil very wet and saturated about 30% remaining		
		Very silty soil with some gravelly material		
		40.1 to 40.5' fine white material		
		Fine silty-brown wet.		
		40.5-41.5' light sand - About 165% coarse		
		41.5-42.5' very wet. Light brown to tan colored		
		coarse sand and silty sand. Some gravelly material		
		42.5-43' light brown with high organic content		
		43-44' light brown. Blown out at 43'		
		44-45' very wet at 45'.		
		45-46' very wet		
		46-47' very wet		
		47-48' very wet		
		48-49' very wet		
		49-50' very wet		
		50-51' very wet		
		51-52' very wet		
		52-53' very wet		
		53-54' very wet		
		54-55' very wet		
		55-56' very wet		
		56-57' very wet		
		57-58' very wet		
		58-59' very wet		
		59-60' very wet		
		60-61' very wet		
		61-62' very wet		
		62-63' very wet		
		63-64' very wet		
		64-65' very wet		
		65-66' very wet		
		66-67' very wet		
		67-68' very wet		
		68-69' very wet		
		69-70' very wet		
		70-71' very wet		
		71-72' very wet		
		72-73' very wet		
		73-74' very wet		
		74-75' very wet		
		75-76' very wet		
		76-77' very wet		
		77-78' very wet		
		78-79' very wet		
		79-80' very wet		

REMARKS: Used 5" dia. coring. Hole located approx 30 minutes upstream from confluence of lake bed. H2O come up in hole. G. W.L. 50-51' feet + 30 minutes upstream confluence.

Backfilled after 8-28-80.

NOTES: Record water test and density test data, if applicable, under remarks.

* Record water level as reached its natural level at date of reading adjacent to graphic symbol or in remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

(Lbs. of rock sampled) 100

*** (Bulk specific gravity of rock) 62.4 (Cubic feet of hole sampled)

**** Record bulk specific gravity in Remarks, stating how obtained (measured or estimated)

Sheet #2

LOG OF AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Project Casco Bays Site S-1
 Date No. 400-2 Coordinates N. E Ground Elevation 828-80
 Depth to Water Level 3.9-Feet Method of Excavation Auger Date 8-28-80

Area Designation _____

Approx. Distances 0.5' X 40'

Level by 2 Baseline

PERCENTAGE OF COBBLES AND BOULDERS **

VOLUME OF WEIGHT OF PERCENTAGE BY
HOLE SAMPLED 3 TO 5-INCH VOLUME OF
(CUBIC FEET) SAMPLED (LENS TO 5-INCHES PLUS Boulders)

CLASSIFICATION AND DESCRIPTION OF MATERIAL

(SEE CHART - "UNIFIED SOIL CLASSIFICATION"
GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	DESCRIPTION	VOLUME OF HOLE SAMPLED	WEIGHT OF SAMPLED (LENS TO 5-INCHES PLUS Boulders)	PERCENTAGE BY VOLUME OF HOLE SAMPLED
C4	1.3	0-1.3' EAT CLIPS about 1/2" high				
SC	2.8	1.3'-2.8' Plastic Lins. About 40% Cobble & Gravel				
	4.0	predominately fine sand with some gravel				
		Few white coquilles occasional brownish tubular shells 0.5'-1.0' high and moist				
		Fine sand. 1.3'-2.8'				
		1.3-2.8 C.L. 45% SAND about 60% Gravel and sand. 1.3'-2.8' Lins. with some gravel				
		2.8'-4.0' Predominately sand with about 40% gravel				
		4.0'-4.8' Lins. Many organic remains with fine sand. Fine sand containing some brownish tubular shells and some gravel				
		4.8'-5.6' Lins. with some gravel				
		5.6'-6.4' Predominately sand with some gravel				
		6.4'-7.2' Lins. with some gravel				
		7.2'-8.0' Lins. with some gravel				

REMARKS:

Sheet 3 of 2

LOG OF AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Feature Closed Basin Hole # 514
Depth 20'-2" Reject None
Date No. 10-10-80 Ground Elevation 520 - 80
Depth to Water Level 8.9 Feet Date 10-10-80

Hole Designation 0-5440-1

Approx. Dimensions 0-5440-1

Letter by G. R. C.

PERCENTAGE OF COBBLES AND BOULDERS **

VOLUME OF WEIGHT OF PERCENTAGE BY
HOLE SAMPLED 3 TO 5-INCH VOLUME OF
CUBIC FEET SAMPLING (LESS THAN 10%) PLUS SAND-
SUSPENDED (LESS THAN 10%)

CLASSIFICATION AND DESCRIPTION OF MATERIAL
(SEE CHART "UNIFIED SOIL CLASSIFICATION"
GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATION)

moist silty 2.8' to 3.2', wet from 3.2'
to 8.9' with some
Dense fine sand 2.8'-8.9'
in very dry weather.

Rock

(Lbs. of rock sampled) 100

*** (Bulk specific gravity of rock) 1.62.4 (Cubic feet of hole sampled)

** Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

Record bulk specific gravity in Remarks, stating how obtained (measured or estimated).

REMARKS: Used at 5' and 8'. Hole reached water at bottom of hole at 8'.
No hole. G.W. h. 3.9'-8'-28'-80'.
Rock found at 8'-28'-80'.

Sheet 2 of 2

LOG OF AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Project Chelan Dam Site S-1

Date No. 100-3 Ground Elevation 8-78-80

Depth to Water Level 3.5'-8.0' Status of Excavation Good Stock

CLASSIFICATION AND DESCRIPTION OF MATERIAL
(SEE CHART - "UNIFIED SOIL CLASSIFICATION"
GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)

CLASSIFICATION SYMBOL LETTER	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	PERCENTAGE OF COBBLES AND BOULDERS **		
			VOLUME OF SCALE SAMPLED 3 TO 5-INCH (CUBIC FEET)	WEIGHT OF SCALE SAMPLED 3 TO 5-INCH (POUNDS)	PERCENTAGE BY WEIGHT OF PLUS 5-INCH VOLUME OF SAMPLED (LBS./CUBIC FEET)
Ct	0.8	0-0.8' bedrock - thin 20% boulders			
Sm	1.5	0-1.5' brownish tan loam -			
Sm	2.3	greenish tan loam -			
Sm	4.0	yellowish brownish tan loam with HCl.			
		red, dry			
		0.8-1.5' pebbled sand - very soft			
		pebbles - about 10% angular to rounded -			
		yellowish tan color to sm. brownish tan			
		weak, about 10% nonplastic fines			
		weak to no reaction with HCl. Few tightly			
		crystalline grains. Brownish tan.			
		1.5-2.3' silty sand - about 25% coarse			
		to predominantly silty fine sand to silt -			
		yellowish tan to brownish tan			
		weak to no reaction with HCl. Tan			
		fine crystalline, glassy, fine sand,			
		brownish tan.			
		2.3-4.0' rock - light tan sand to silty			

REMARKS:

NOTES: Record water test and density test data, if applicable, under remarks.

* Record water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Bulk specific gravity of rock is 2.4 (Cubic feet of hole sampled).

*** Record bulk specific gravity in Remarks, starting how obtained (measured or estimated).

(Lbs. of rock sampled) 100

**** Record bulk specific gravity of rock in Remarks.

***** Record bulk specific gravity in Remarks, starting how obtained (measured or estimated).

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

Sheet 2 of 2

LOG OF AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Project Chestnut Ranch

Project

Date No.

Grand Elevation

Bit 8-28-80

Area Designation

Apex. Distances

Labeled by

Legend by

PERCENTAGE OF COBBLES AND BOULDERS **

VOLUME OF

WEIGHT OF

PERCENTAGE BY

CLASSIFICATION AND DESCRIPTION OF MATERIAL

(SEE CHART - "UNIFIED SOIL CLASSIFICATION"

GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)

Method of Excavation Hand Dug

Depth to Water Level

SAND - Abundant fine sandSome light-colored sandSome very basic sandVery variable with size. Black at top.Discardrical occurring at the bottomBottomREMARKS: Used in hand auger hole located approx. 100' from construction site bed. H2O came up in hole. G.W. L. 3-5-feet 30 minutes after construction began.Back-filled hole to 28-30.

NOTES: Record water test and density test data, if applicable, under Remarks.

** Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in Remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

(Lbs. of rock sampled) 100

*** (Bulk specific gravity of rock) 62.4 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks, stating how obtained (measured or estimated)

LOG OF AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS

Project Clos on Basalt St. C Area Registration 0.5 X 52'

Depth No. 24-4 Coordinates N. 0 Approx. Elevation 8-28-80

Depth to Water Level 4.7-Feet Method of Excavation Hand Auger Date 8-28-80

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART - "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)			PERCENTAGE OF COBBLES AND BOULDERS **	
			LETTER	SPGRAPHIC	VOLUME OF POLE SAMPLED 3 TO 5-INCHES	WEIGHT OF POLE SAMPLED (LEGS TO 5-INCHES ADAPTED)	
SIC	1.2	-	D-12' CLAYEY SILT - 10% GLEY				
SOSM	4.4	-	Coarse to very coarse sand - 10% gravel to subangular to subrounded 48% fine sand Plastic limon, alkali, mineralized with MgCl.				
SP-SM	4.4-5.2	8-28	Tang. drags				
			4.2-4.4' Poorly Grained Sand 70% Silt 30% SAND - About 95% coarse to very coarse The surface had about 5% silt and clay lime, which becomes more common with age. Few fine-grained particles remain. Fe staining is minimal, but the clayey capsular varieties are still present. 4.4-5.2' Light Grayish Sand 70% Silt 30% SAND - About 95% coarse to very coarse lime, which becomes more common with age. 5% iron staining. Clayey capsular varieties are still present. 5.2-5.7' Dark gray to black, wet This is the base of the hole.				
			Mineralization:				
			5.2-5.7' Gleyed sand 70% Silt 30% This is the base of the hole.				

REMARKS:

Used 5" hand auger. Hole located approx. 200 ft. east of 8-28-80 corner up in N.E. 1/4, L. 4.7-Feet 30' from back of construction site.

Back L. 4.7-Feet hole 8-28-80

NOTES: Record water test and density test data, if applicable, under Remarks.

* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

(Lbs of rock sampled) 100

*** Bulk specific gravity of rock 62.4 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks, starting how obtained (measured or estimated)

LOG OF AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS

Feature	Project	Location Crossed	Area Designation		
Bore No.	Coordinates N.	Ground Elevation	Aptar Elevation		
Beds & Water Table	Bottom of Excavation	Date	Logged by		
Beds 10' thick					
CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART - "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)					
CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	PERCENTAGE OF COBBLES AND BOULDERS **		
LETTER GRAPHIC	FEET		VOLUME OF SOIL SAMPLED 3 TO 5-INCHES (CUBIC FEET)	WEIGHT OF SOIL SAMPLED 3 TO 5-INCHES (LBS.)	PERCENTAGE BY VOLUME OF PLUG 5-INCHES (LBS.) PLUS SHIMMER
Ck	1.2	1-1.2' STONY Ck. bed. About 70% cobbles			
SM	2.7	2-2.7' Rives. About 90% coarse sand			
Sm	4.6	3-4.6' Rives. About 90% medium sand			
	4.0	4-4.0' Black gravel with 40% fine			
		gray & light gray gravel, some			
		light gray & white sand			
		yellowish gray gravel with 30% white			
		rivers. Weak gravel with 40% fine			
		coarse & fine sand, fine			
		coarse & fine sand			
		2-7-4.0' STONY Ck. bed about 85% cobbles			
		to gravelly sand. Fine sand mixed with			
		coarse sand. About 10% gravel			
		Rives. About 90% gravel with 10%			
		Fine & very fine gravel, gravelly			
		sand.			
		Discoverd large size 2-4.0'-thick			
		ice wedge joint about 10'.			
REMARKS: Located 5' or 6' east of center of 10' keel. 6' to center up in hole. 6' width 3-5' deep 3' min. 2' & 4' max. Bent bottom hole 8-29-80					

NOTES: Record water test and density test data, if applicable, under remarks.

* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

*** Bulk specific gravity of rock) 62.4 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks.

**** Lbs. of rock sampled) 100

Sheet 102

LOG OF AUGER HOLE
 FOR BORROW AND FOUNDATION INVESTIGATIONS

 Project: Closed Basin Slab
 Coordinates N. 46-6
 E. 5-50 feet
 Depth to Water Level: 4 feet
 Method of Excavation: Hand Auger

Area Investigation

Apex: Stempskin 0.5' x 5.0'Labeled by: C. D. BushDate: 8-29-80

PERCENTAGE OF COBBLES AND BOULDERS **

 CLASSIFICATION AND DESCRIPTION OF MATERIAL
 (SEE CHART - UNIFIED SOIL CLASSIFICATION
 GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	VOLUME OF (CUBIC FEET) SAMPLED 3 TO 5-INCH (CUBIC FEET)	WEIGHT OF (CUBIC FEET) SAMPLED 3 TO 5-INCH PLUS 5-INCH (CUBIC FEET)	PERCENTAGE OF COBBLES AND BOULDERS **
CL	1.0	0-10' SAND & CLAY - About 80% sand, 20% fine silt.			
SM	3.0	Fine silty sand to sand, 1/2" to 1" diam. fine gravel, 1/2" to 1" diam. cobbles.			
SP-SM	3.0-4.0	Dark brownish tan, moist. Few small white shells found along from 3.0' to 4.0', moist from 3.0' to 4.0'.			

4.0-5.0' slightly sandy - about 70% coarse to medium size light grayish to sub-silver colored sand. About 4-5% 3/8" to 1" diameter pebbles. Very little organic material. Few fine cobbles 1/2" to 1" in diameter. Few fine white precipitates to stains. Few fine clayey zones.

5.0-5.0' Darker colored sandy to silty soil. Sand about 50% coarse to medium size. Fine gravel and sand mixed in with 10-15% pebbles. Light tan color with some

REMARKS:

 NOTES: Record water test and density test data, if applicable, under remarks.
 * Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

(Lbs. of rock sampled) 100

 ** (Bulk specific gravity of rock) 62.4 (Cubic feet of hole sampled)
 Record bulk specific gravity in Remarks, stating how obtained (measured or estimated)

*** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

Block 20

LOG OF AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS

Project	Closed Class		Area Designation		
Coordinates N.	8-29-80		Avg. Elevation 0.51 X 50		
Ref. N.	4-5-60		Altitude 714 ft. S.H.		
CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)					
CLASSIFICATION	SIZE AND TYPE OF SAMPLE TAKEN	DEPTH (FEET)	VOLUME OF WEIGHT OF PERCENTAGE OF WEIGHT OF PERCENTAGE OF SAMPLE TAKEN 3 TO 5-INCH VOLUME OF 5-INCH VOLUME OF COBBLES AND BOULDERS ** PLUG SAMPLED (LBS.) TO 5-INCH PLUG SAMPLED (LBS.)		
Symbol					
Letter					
Remarks:					
Boring 20 - Topsoil 0'-2' 100 lbs. of rock sampled.					
Boring 20 - 2'-5' 100 lbs. of rock sampled.					
Boring 20 - 5'-8' 100 lbs. of rock sampled.					
Boring 20 - 8'-10' 100 lbs. of rock sampled.					
Boring 20 - 10'-12' 100 lbs. of rock sampled.					
Boring 20 - 12'-14' 100 lbs. of rock sampled.					
Boring 20 - 14'-16' 100 lbs. of rock sampled.					
Boring 20 - 16'-18' 100 lbs. of rock sampled.					
Boring 20 - 18'-20' 100 lbs. of rock sampled.					
Boring 20 - 20'-22' 100 lbs. of rock sampled.					
Boring 20 - 22'-24' 100 lbs. of rock sampled.					
Boring 20 - 24'-26' 100 lbs. of rock sampled.					
Boring 20 - 26'-28' 100 lbs. of rock sampled.					
Boring 20 - 28'-30' 100 lbs. of rock sampled.					
Boring 20 - 30'-32' 100 lbs. of rock sampled.					
Boring 20 - 32'-34' 100 lbs. of rock sampled.					
Boring 20 - 34'-36' 100 lbs. of rock sampled.					
Boring 20 - 36'-38' 100 lbs. of rock sampled.					
Boring 20 - 38'-40' 100 lbs. of rock sampled.					
Boring 20 - 40'-42' 100 lbs. of rock sampled.					
Boring 20 - 42'-44' 100 lbs. of rock sampled.					
Boring 20 - 44'-46' 100 lbs. of rock sampled.					
Boring 20 - 46'-48' 100 lbs. of rock sampled.					
Boring 20 - 48'-50' 100 lbs. of rock sampled.					
Boring 20 - 50'-52' 100 lbs. of rock sampled.					
Boring 20 - 52'-54' 100 lbs. of rock sampled.					
Boring 20 - 54'-56' 100 lbs. of rock sampled.					
Boring 20 - 56'-58' 100 lbs. of rock sampled.					
Boring 20 - 58'-60' 100 lbs. of rock sampled.					
Boring 20 - 60'-62' 100 lbs. of rock sampled.					
Boring 20 - 62'-64' 100 lbs. of rock sampled.					
Boring 20 - 64'-66' 100 lbs. of rock sampled.					
Boring 20 - 66'-68' 100 lbs. of rock sampled.					
Boring 20 - 68'-70' 100 lbs. of rock sampled.					
Boring 20 - 70'-72' 100 lbs. of rock sampled.					
Boring 20 - 72'-74' 100 lbs. of rock sampled.					
Boring 20 - 74'-76' 100 lbs. of rock sampled.					
Boring 20 - 76'-78' 100 lbs. of rock sampled.					
Boring 20 - 78'-80' 100 lbs. of rock sampled.					
Boring 20 - 80'-82' 100 lbs. of rock sampled.					
Boring 20 - 82'-84' 100 lbs. of rock sampled.					
Boring 20 - 84'-86' 100 lbs. of rock sampled.					
Boring 20 - 86'-88' 100 lbs. of rock sampled.					
Boring 20 - 88'-90' 100 lbs. of rock sampled.					
Boring 20 - 90'-92' 100 lbs. of rock sampled.					
Boring 20 - 92'-94' 100 lbs. of rock sampled.					
Boring 20 - 94'-96' 100 lbs. of rock sampled.					
Boring 20 - 96'-98' 100 lbs. of rock sampled.					
Boring 20 - 98'-100' 100 lbs. of rock sampled.					

REMARKS:
is hole G.W. h. 4-5-80 and so indicates contact of lake bed.
Bore hole S-29-80 came up to bottom of construction material.

- NOTES: Record water test and density test data, if applicable, under remarks.
** Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.
** Applicable only to borrow pits and to foundations which are potential sources of construction materials.
** Applicable to foundations which are potential sources of construction materials.

** (Lbs. of rock sampled) 100

** (Bulk specific gravity of rock) 1.624 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks.
Record water test and density test data in Remarks.

Sheet 1 of 2

LOG OF ~~TEST~~ ON AUGER HOLE
 FOR BORROW AND FOUNDATION INVESTIGATIONS

Project		Area Designation	
Feature: <i>Wet Banks</i>		Ground Station: <i>C-51A 67</i>	
Date No.	Coordinates N. E.	Report. Method: <i>Auger</i>	
Depth to Water Level:	6.0 - Feet	Borad of Excevations	
CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)			
CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	VOLUME OF SOLE SAMPLED 3 TO 5-INCH (CUBIC FEET) SAMPLED UNTIL 3 TO 5-INCHES FRACTION
LETTER GRAPHIC			PERCENTAGE OF COBBLES AND BOULDERS **
S-1-SC	1.3'	0-1.3' SANDY SILT TO SANDY CLAY - Abund	
Sm	3.5	3.5'-6' Slightly silty fine sand. Regularly interbedded sand. Black mottles here and there. Some light brown streaks. Few light white horizontal fibrous roots from 0.2' to one". Brand, dry.	
Sm-Sp	6.0 ft. L. 8-29	6.0'-7' Silty sand to sand. Light tan and greyish green. Some fine silt and clay. Some light brown streaks. Few light white horizontal fibrous roots from 0.2' to one". Brand, dry.	
		7.3'-7.5' Light tan sand - about 80% coarse to light brownish tan subangular sand. Abund 20% light brownish fine sand streaks which with light tan light crystalline gypsum and light white streaking. Few streaks. Brand, dry.	
		7.5'-7.8' Light tan sand to silty sand - About 90% coarse to angular fine sand. Some light brown streaks and Abund 10% white sand. Light tan streaks which with light tan light crystalline gypsum and light white streaks. Some light tan gypsum veins.	
NOTES: Record water test and density test date, if applicable, under remarks.			
** Record after water has reached its natural level; give date of reading or depth to graphic symbol or in remarks.			
** Applicable only to borrow pits and to foundations which are potential sources of construction materials.			
REMARKS:			

*** (Lbs. of rock sampled) 100
 *** (Bulk specific gravity of rock) 2.64 (Cubic feet of hole sampled)
 Record bulk specific gravity in Remarks. Record bulk specific gravity of construction materials.

Sheet 1 of 2

LOG OF ~~PIER~~ OR AUGER HOLE FOR BORROW AND FOUNDATION INVESTIGATIONS

Project <u>Closed Basic Soil</u>		Area Investigation	
Date Drilled	Date Drilled	Approx. Distances 0.5" X 59"	Log by <u>G. Bush</u>
Depth to Water Level	Depth to Water Level	Date of Excavation <u>0-2-80</u>	Logged by <u>G. Bush</u>
CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART - "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)			
CLASSIFICATION SYMBOL LETTER	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	PERCENTAGE OF COBBLES AND BOULDERS **
SC	2.3		
SP-Sm	3.3		
Sm	4.3	3.0-2.1	
SP	5.9	9-2	
0-2.3' CLAYEY SILT - About 85% coarse To fine sand to subangular. About 5% sand. About 15% medium to very fine. Weak reaction with HCl. Few fine cobbles. Grossly. Few fine white limestone gravel, dry			
2.3-3.3' DENSE GRANULAR SAND TO SILTY SAND - About 90% coarse to very granular to subangular sand. About 10% granular silt. Weak to no reaction with HCl. Fair reaction with H2O. Many fine sand and (1/2") gravel. moist			
3.3-4.3' SILTY SAND - About 80% coarse to very granular to subangular sand. About 20% granular silt. Weak to no reaction with H2O. Few fine cobbles. Grossly. Dry and moist.			
4.3-5.9' POORLY GRADED SAND - About			

REMARKS:

NOTES: Record water test and density test data, if applicable, under remarks.

* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

(Lbs. of rock sampled) 100

*** (Bulk specific gravity of rock 62.4 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks, stating how obtained or estimated)

Sheet 2

LOG OF TEST AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS

Project *Garrison classic* SK 1
Bore No. 44-8
Depth to Water Level* 4.5-feet

Borated at Excavations *located between* Date *9-2-80*

Area Location

Approx. Directions *E-S-W-N-E-S*
Dug by *C. R. S.*

CLASSIFICATION AND DESCRIPTION OF MATERIAL

(SEE CHART - "UNIFIED SOIL CLASSIFICATION"
GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)

CLASSIFICATION SYMBOL		DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	PERCENTAGE OF COBBLES AND BOULDERS **		
LETTER	GRAPHIC			VOLUME OF HOLE SAMPLED (3 TO 5-INCH VOLUME OF PLUS 6-INCH VOLUME OF CUBIC FEET)	WEIGHT OF SAMPLED (3 TO 5-INCH) PLUS 6-INCH (SAMPLED CUBIC FEET)	PERCENTAGE BY WEIGHT OF SAMPLED (3 TO 5-INCH) PLUS 6-INCH (SAMPLED CUBIC FEET)
		-	65% gravel in sand, 25% sand/silt 10% silt Gravel about 1/2" diameter Firky, grayish yellow sand & silt Gravel 1/2" to 1". Broken, very fragile			
		-	Discontinuous augerings, 2 to 20-feet in very fine material			
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				
		-				

REMARKS: Disect soil hand auger. Hole located approx center of lake bed. He came up to hole

G.W.L. 4.5-feet bottom to water congealed.

Back filled hole 9-2-80.

(Lbs. of rock sampled) 100

NOTES: Record water test and density test data, if applicable, under remarks.

* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Record specific gravity of rock (bulk specific gravity of rock) 62.4 (Cubic feet of hole sampled)

** Applicable only to borrow pits and to foundations which are potential sources of construction materials. Record bulk specific gravity in Remarks, stating how obtained (measured or estimated)

LOG OF TRENCH OR AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS

Permit Number	Wetheads	Project	Crosscut Bridge S-44	Area Designation	D-5-N-7-1
Date No.	4-2-70	Coordinates N.		Aprox. Dimensions	0.5" X 10' x 10'
Depth to Water Level	6.5'-8.0'	Method of Excavation	Auger Test	Date	8-29-80
CLASSIFICATION SYMBOL	SIZE AND TYPE OF SAMPLE TAKEN	DEPTH (FEET)	CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART -UNIFIED SOIL CLASSIFICATION, GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)	PERCENTAGE OF COBBLES AND BOULDERS **	
LETTER GRAPHIC					
Ch	2.0		0-2.0' SANDY SILT & 65% COARSE GRAVEL		
Sm	4.5		2.0'-4.5' LOOSE SILTY SAND WITH SOME COBBLES AND SMALL GRAVEL		
SPSM	7.7	8.29	Crushed rock or gravel 2" to 3" in size gravelly sand dry.		
			3.0-4.5' SILTY SAND - About 85% COARSE GRAVELLY SILTY SAND WITH SUB- COBBLED SAND. Black pebbles with red fawn like streaks. Thin silty fine layer in the middle. 7.7' to 8.29' Gravelly soil of slightly coarsened and 3" to 4" dry		
			4.5-7.7 POORLY GRADED DRY SAND TO SILTY SAND - Above - 85% COARSE SILTY SAND to COBBLED SAND. About 50% sand with small stones. 11' to 14' very thin with thin lime soil, 8.29' to bed. Brownish Diamictite layer occurring at 7.7'-feet		
			The upper 10' maximum depth of the hole		
			REMARKS: Used 5" hand auger; bottom layer of rock bed. 8.29' came up to hole, G.W.L. 6.5'-feet to 8.0' which is about 10' deep.		

NOTES: Record water test and density test data, if applicable, under remarks.
* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.
** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

** (lbs. of rock sampled) 100
** (Cubic feet of rock) 62.4 (Cubic feet of hole sampled)
Record bulk specific gravity in Remarks, stating how obtained (measured or estimated)

LOG OF AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Project Chesnut Island

Date No. 100-10

Coordinates N. E

Depth to Water level* At 7-Feet

Borad Elevation

Date 9-2-80

Method of Excavation Hand Dredge

Site Designation C-1

Appl. Dimensions 0.5' x 72'

Legend by G. J. F.

PERCENTAGE OF COBBLES AND BOULDERS **

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART - "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)	VOLUME OF SCALE SAMPLED 3 TO 5-INCH CUBIC FEET	WEIGHT OF SAMPLED 3 TO 5-INCH CUBIC FEET	PERCENTAGE BY VOLUME OF 3 TO 5-INCH CUBIC FEET	WEIGHT OF 3 TO 5-INCH CUBIC FEET	PERCENTAGE BY WEIGHT OF 3 TO 5-INCH CUBIC FEET
C1	2.0		0-7.0' Shallow slope soil to bedrock					
SM	3.0		Rocky talus with 20% rock fragments					
SPSM	7.0		Rocky talus with 20% rock fragments					
	9.2		2.0-3.8' SILTY SEDIMENT - Black to reddish brown					
			to light brown to greyish brown					
			5.5-6.5' talus layer, black to brown reddish brown					
			with 10% talus layer, black to reddish brown					
			brown, mottled					
			3.8-7.2' Reddish brown sand to silty sand					
			. SAND - About 95% coarse to very fine sand					
			Light tan to yellowish tan sand about 5%					
			coarse to fine sand to very fine sand with					
			light tan to light greyish tan sand.					
			Brown, very light					
			Discoveries during 9-22 survey					
			taupe + mottled					
			REMARKS: Used 5" hand auger. Hole located approx center of lake bed. At 0 came up in hole. G.W.L. 6.7 feet 30 minutes after construction.					
			Back Dredged hole 9-2-80					

NOTES: Record water test and density test data, if applicable, under remarks.

* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.

** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

(Lbs. of rock sampled) 100

*** Bulk specific gravity of rock 62.4 (Cubic feet of hole sampled)

Record bulk specific gravity in Remarks, stating how obtained or estimated.

Sheet 1 of 2

**LOG OF EARTH AUGER HOLE
FOR BORROW AND FOUNDATION INVESTIGATIONS**

Project		Area Designation	
Feature Name	Bor. No.	Coordinates N. Lat. E. Long.	Elev.
Rock to Water Level:	5-6 - Feet	Bor. of Excavation	Date
CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART - UNIFIED SOIL CLASSIFICATION AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)			
CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	VOLUME OF COBBLES AND BOULDERS **
LETTER GRAPHIC			PERCENTAGE BY WEIGHT OF HOLE SAMPLED 3 TO 5-INCHES SAMPLED LESS THAN 3 TO 5-INCHES VOLUME OF PLUG 5-INCH SAMPLED LESS THAN 3 TO 5-INCHES CUBIC FEET
SC	1.7	D-1.7' CLAYED SOIL & Abund. 75% coarse Soil containing 10% medium sand, 10% fine sand, 10% to Subangular to subangular stones. medium grain & fine sand near base with high fine sand streaks in sand near base; dry from 0.0' to 0.5' moist from 0.5' to 1.7'.	
SM	4.2		
SP-SM	5.1		
SM	9-2		
SM	26		
NOTES: Record water test and density test data, if applicable, under remarks.			
** Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.			
** Applicable only to borrow pits and to foundations which are potential sources of construction materials.			
REMARKS:			

NOTES: Record water test and density test data, if applicable, under remarks.
** Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.
** Applicable only to borrow pits and to foundations which are potential sources of construction materials.

(Lbs. of rock sampled) 100
** Bulk specific gravity of rock 62.4 (Cubic feet of hole sampled)
Record bulk specific gravity in Remarks, stating how obtained (measured or estimated)

LOG OF AUGER HOLE

FOR BORROW AND FOUNDATION INVESTIGATIONS

Nature Wet banks

Project

Coordinates N. Closest basic SLLDate No. Aug-12Elevation Sea level

Area Designation

Apex. Elevation 0.5' x 77'Method of Excavation Hand AugerDate Aug-12-80Logged by C. J. West

Depth to Water Level'

Date Aug-12Method of Excavation Hand Auger

Grand Elevation

Date Aug-12-80

PERCENTAGE OF COBBLES AND BOULDERS **

CLASSIFICATION SYMBOL	DEPTH (FEET)	SIZE AND TYPE OF SAMPLE TAKEN	CLASSIFICATION AND DESCRIPTION OF MATERIAL (SEE CHART - "UNIFIED SOIL CLASSIFICATION" GIVE GEOLOGIC AND IN-PLACE DESCRIPTION FOR FOUNDATION INVESTIGATIONS)	VOLUME OF HOLE SAMPLED (IN CUBIC FEET)	WEIGHT OF SAMPLED LUMBS TO 5-INCHES VOLUME OF (CUBIC FEET)	PERCENTAGE BY WEIGHT OF LUMBS	PERCENTAGE BY VOLUME OF LUMBS
LETTER GRAPHIC							
SP-SC	1.0	0-10' SIZED DOWN TO 1/2" X 1/2"	About 55% coarse gravelly sand to subangular to rounded 45% slightly blocky grains. Weak wash dissolution and particle size reduction at base first 10' of borings from 0 to 10' S. Brown, dry.				
SP-Sm	1.0-2.7'	1.0-7.7' DOWNSIZED DOWN TO 1/2"	SAND - about 95% coarse median-size size, angular to subangular sand about 50% moderately sized, weak to no matrix binding, few fine angular thin gypsum fibers, fine fine nodules found: 1.5', 4.0', 5.0' stations from 5.1' to 7.7', brown, dry, brown 1.0' to 4.5' sand and gravel, tan 6' to 7.7'.				
			Dissolution occurring at 27'-bottom and limestone.				

REMARKS: Used 5" hand auger. Hole located approx center of lake bed. He'd come up in hole, G.W. b. 6, 7-8 feet & 30 minutes after coming to water
Bored & filled hole 9-2-80

NOTES: Record water test and density test data, if applicable, under remarks.
* Record after water has reached its natural level; give date of reading adjacent to graphic symbol or in remarks.
** Applicable only to borrow pits and to foundations.
** Record bulk specific gravity of rock 62.4 (Cubic feet of hole sampled).
Record bulk specific gravity in Remarks, stating how obtained (measured or estimated).

MOISTURE DETERMINATIONS

PROJECT Closed Basin FEATURE Wet Lands LABORATORY INDEX NO. TF

SAMPLE NUMBER	Aw-7 0.0'-1.0	Aw-7 2.7'-3.1	Aw-7 4.2'-4.7	Aw-8 0.0'-2.3	Aw-8 2.8'-3.2	Aw-8 4.5'-5.0	Aw-9 0.0'-0.2	Aw-9 4.5'-4.9
DISH NUMBER	5	11	55	53	26	62	29	30
WT DISH + WET SOIL	716.66	732.30	738.08	735.76	644.53	812.06	634.39	720.88
WT DISH + DRY SOIL	689.21	712.36	692.60	710.29	607.66	705.26	612.31	686.45
WEIGHT OF DISH	196.56	200.51	213.21	182.94	196.07	211.32	179.56	192.70
WEIGHT OF WATER	27.45	19.94	45.48	25.47	36.87	106.80	22.08	34.43
WEIGHT OF DRY SOIL	492.65	511.85	479.39	527.35	411.59	493.94	432.75	493.75
PERCENT MOISTURE	5.57	3.90	9.49	4.83	8.96	21.62	5.10	6.97
SAMPLE NUMBER	Aw-9 3.2'-6.6	Aw-10 0.0'-0.4	Aw-10 4.5'-5.0	Aw-10 6.7'-7.2	Aw-11 0.0'-0.5	Aw-11 0.7'-1.1	Aw-11 5.0'-5.4	Aw-12 0.0'-1.0
DISH NUMBER	5.6	2	44	16	59	19	60	54
WT DISH + WET SOIL	785.37	611.61	636.81	913.28	522.31	560.57	824.07	720.72
WT DISH + DRY SOIL	654.34	606.67	606.01	800.97	510.79	519.11	745.36	703.40
WEIGHT OF DISH	212.77	206.11	176.76	206.42	201.67	195.97	221.17	218.19
WEIGHT OF WATER	131.03	61.94	30.80	112.31	11.52	41.46	78.71	16.93
WEIGHT OF DRY SOIL	441.57	400.56	429.25	594.05	309.12	323.14	524.19	483.21
PERCENT MOISTURE	29.67	1.23	7.18	18.90	3.73	12.83	15.02	3.50
SAMPLE NUMBER	Aw-12 1.0'-1.5'	Aw-12 5.7'-6.1						
DISH NUMBER	13	20						
WT DISH + WET SOIL	'							
WT DISH + DRY SOIL	780.57	631.31						
WEIGHT OF DISH	765.99	574.98						
WEIGHT OF WATER	214.16	206.97						
WEIGHT OF DRY SOIL	14.64	56.33						
PERCENT MOISTURE	2.65	15.31						

MOISTURE DETERMINATIONS

PROJECT	Closed Basin	FEATURE	Wet Lands	LABORATORY INDEX NO.	TG
SAMPLE NUMBER	Aw-1 0.0'-0.4'	Aw-1 0.4'-2.0'	Aw-1 2.0'-2.9'	Aw-1 2.9'-3.5'	Aw-1 3.5'-4.0'
DISH NUMBER	28	61	57	23	38
WT DISH + WET SOIL	533.55	569.78	687.52	657.41	687.24
WT DISH + DRY SOIL	525.98	541.04	636.90	601.65	594.85
WEIGHT OF DISH	198.64	207.94	211.89	218.68	212.80
WEIGHT OF WATER	7.57	28.94	50.62	55.76	92.39
WEIGHT OF DRY SOIL	327.34	333.10	425.01	383.77	382.05
PERCENT MOISTURE	2.31	8.69	11.91	14.56	24.18
SAMPLE NUMBER	Aw-2 0.1'-4.0'	Aw-3 0.1'-0.8'	Aw-3 1.5'-1.9'	Aw-3 3.5'-4.0'	Aw-4 0.0'-0.7'
DISH NUMBER	18	3	43	40	51
WT DISH + WET SOIL	743.51	541.48	725.17	849.72	623.34
WT DISH + DRY SOIL	644.05	507.31	615.32	764.43	649.00
WEIGHT OF DISH	197.34	204.92	180.22	199.73	201.63
WEIGHT OF WATER	99.46	34.17	109.85	85.29	24.34
WEIGHT OF DRY SOIL	446.71	302.39	435.10	564.70	441.37
PERCENT MOISTURE	22.27	11.30	25.25	15.10	5.52
SAMPLE NUMBER	Aw-4 4.4'-5.2'	Aw-5 0.2'-0.6'	Aw-5 0.6'-1.0'	Aw-5 3.8'-4.0'	Aw-6 0.0'-0.3'
DISH NUMBER	36	14	21	35	50
WT DISH + WET SOIL	987.72	637.50	597.49	835.06	686.01
WT DISH + DRY SOIL	842.44	512.00	499.13	730.17	668.68
WEIGHT OF DISH	196.19	172.24	205.46	183.49	213.62
WEIGHT OF WATER	145.48	125.50	98.36	104.89	123.31
WEIGHT OF DRY SOIL	646.25	332.76	293.67	546.69	455.06
PERCENT MOISTURE	22.51	36.94	33.49	19.10	3.81

